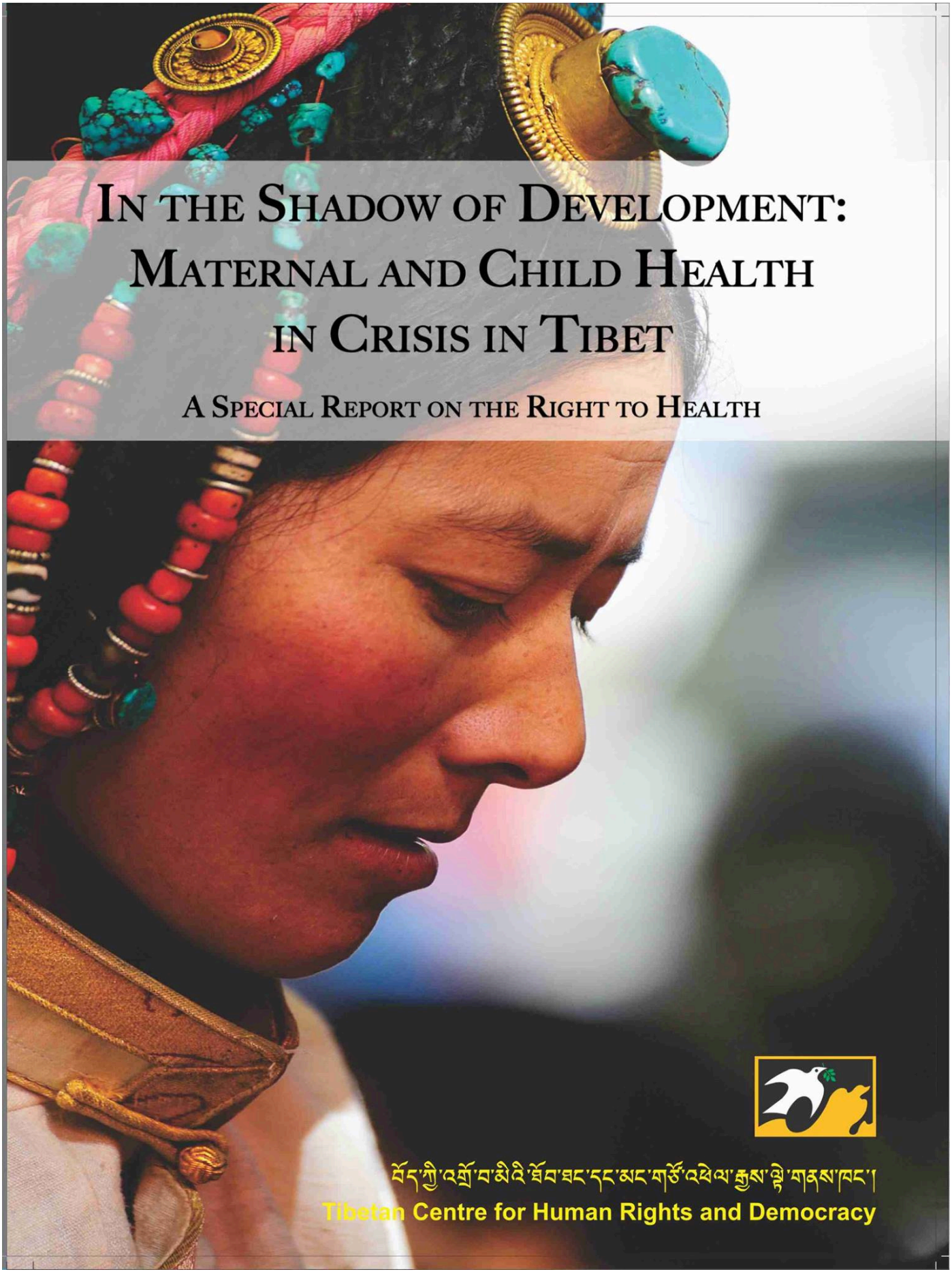

In the Shadow of Development: Maternal and Child Health in Crisis in Tibet

A Special Report on the Right to Health

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Tibetan Centre for Human Rights and Democracy

IN THE SHADOW OF DEVELOPMENT: MATERNAL AND CHILD HEALTH IN CRISIS IN TIBET

A SPECIAL REPORT ON THE RIGHT TO HEALTH

TIBETAN CENTRE FOR HUMAN RIGHTS AND DEMOCRACY

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Executive Summary

The following report provides an in-depth assessment of the current state of maternal and child health in Tibet. By means of quantitative and qualitative analysis, this report explores how a failing system of public healthcare has compounded Tibetan women and children's high risk for mortality and permitted its translation into extremely poor health conditions. Specifically, this report documents how health system neglect of rural populations has permitted widespread maternal and child mortality in Tibet.

The risk assessment in this report finds that Tibetan women and children in the Tibet Autonomous Region (TAR) and Gansu, Qinghai, Sichuan, and Yunnan Provinces are at very high relative risk of death as a result of four major factors. These factors are: 1.) high rates of poverty; 2.)widespread lack of education;3.) geographic isolation from healthcare; and 4.) significant cultural disincentives to health services utilization.

Analysis of the principal indicators of maternal and child health shows that high risk has translated into extremely poor conditions for Tibet's women and children. Conditions in rural and remote areas and the TAR are particularly poor, and consistently express drastic disparities with conditions with the PRC on average. In 2009, maternal mortality was eight times higher than in the PRC on average, infant mortality was nearly three times higher, and severe child malnutrition was over twice as high. In 2012, life expectancy in the TAR was 8.5 years shorter than in the PRC on average.[1]Conditions appear better in Gansu, Qinghai, Sichuan, and Yunnan Provinces, but reflect the statistical weight of these regions' overwhelmingly non-Tibetan populations. The actual conditions experienced by Tibetan populations of these regions are likely much more similar to the poor conditions of the TAR.[2]

Ultimately, poor conditions are attributed to two failures of the State's centralized clinical model of health services delivery. First, the centralized system excludes the most disadvantaged rural populations from the system of healthcare by failing to ensure service coverage -even for critical services such as skilled birth attendance and emergency obstetric/neonatal care. Second, the decentralized nature of health system financing undercuts both the capacity and quality of health services in those rural areas where they are accessible to patients. Both failures create major barriers to adequate healthcare, including severely limited patient access, limited patient utilization of available health services, and the poor quality of health services.

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[1]China National Population and Family Planning Commission. (2010). *China population and family planning yearbook*.509, 513; National Bureau of Statistics of China (1990, 2000, 2010).*Statistical yearbooks of Gansu Province, Qinghai Province, Sichuan Province, Yunnan Province, and the Tibet Autonomous Region*. (1990), (2000), (2010).

[2] Fischer, A. (2011). *The Great Transformations of Tibet and Xinjiang: a comparative analysis of rapid labour transitions in times of rapid growth in two contested minority regions of China*. Paper presented at conference: 'Challenging the Harmonious Society: Tibetans and Uyghurs in Socialist China.' 5. Copenhagen: Nordic Institute of Asian Studies. 20-21 May; Fischer, A. (2002). *Poverty by Design: The Economics of Discrimination*. 11-12. Canada Tibet Committee. Retrieved from http://www.tibet.ca/_media/PDF/PovertybyDesign.pdf

Despite these challenges, maternal and child health in Tibet can be transformed. This report offers a model for the achievement of sustainable, equitable, and high quality maternal and child health in Tibet. It argues for abroad, government-led intervention that combines improvement to the existing clinical system with the development of a community health worker-based system of decentralized rural health services delivery. The model incorporates the strengths of three highly effective maternal and child health programs in Tibet, and focuses on increasing access to healthcare, utilization of available services, and the improvement of service quality. If government does not intervene however, the inequity in healthcare and widespread mortality currently faced by the women and children of Tibet will continue unabated.

I. Introduction

During the last 15 years, the People's Republic of China (PRC) has made vast improvements at the national level in both maternal and child health. Major increases in government healthcare expenditure at the national level, significant investment in physical and human healthcare infrastructure, and expansions of its national health insurance systems, among other actions, have led to marked decreases in both morbidity and mortality. These measures have improved health conditions for many of the nation's women and children.[1]

The PRC's progress in improving conditions has been guided primarily by the United Nations Millennium Development Goals (MDGs) - a set of eight human development goals for the period 2000 to 2015, which were established by the United Nations Millennium Declaration in 2000. Two of the MDGs specifically concern the improvement of maternal and child health. Under MDG 4, States aim to reduce their1990 under age-five child mortality rates by two-thirds by 2015 (Target 4a). Under MDG 5, States aim to improve maternal health by reducing their1990 maternal mortality ratios by three-quarters(Target 5a) and achieving universal access to reproductive health by 2015 (Target 5b).[2]

United Nations reviews of the PRC's progress on MDGs 4 and 5 indicate that it has made major improvements since 1990. By the end of 2012, the PRC had already achieved MDG Target 4a, reducing under age-five child mortality from 60.0% in 1991 to only 13.2%.[3] UN assessments also found that the PRC was "likely" to achieve MDG Target 5a, having already reduced its maternal mortality ratio by 74.1% since 1990. Finally, with rates of systematic maternal healthcare steadily rising (a gain of 8% coverage from 2000 to 2011), UN evaluations in 2012 found the PRC "potentially" able to achieve Target 5b by 2015.[4]

Such significant progress has garnered high praise for the PRC from the UN, numerous health advocacy organizations, and Chinese and international media. To the degree that this improvement has benefitted the lives of the PRC's women and children, such praise is wholly merited.

However, the PRC's success in meeting the Millennium Development Goals does not reflect the current condition of maternal and health in Tibet. Because MDG evaluations of health conditions in the PRC focus on conditions in aggregate (i.e. at the

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[1] The World Bank. (2014). *Health expenditure, total (% of GDP)*. Retrieved from http://data.worldbank.org/indicator/SH.XPD.TOTL.ZS?page=3; National Bureau of Statistics of China. (2013). *National Statistical Yearbook*. Chapters 21-1, 21-2, 21-19 [*hereinafter* 2013 China National Statistical Yearbook]; United Nations System in China, Ministry of Foreign Affairs of the People's Republic of China. (2013). *China's progress towards the millennium development goals: 2013 report*. 27-35. Retrieved from http://www.cn.undp.org/content/dam/China/docs/Publications/ UNDP-CH-MDGs2013_english.pdf [*hereinafter*China MDG Progress Report 2013].

[2]China MDG Progress Report, *supra* note 1, at 27-35.

[3]*Id*. at 27-29.

[4]*Id*. at 30-35.

level of national averages), they are insensitive to regional disparities in health conditions, and fail to recognize the deeply troubling nature of maternal and child health in Tibet.[5]

Evaluation of disaggregated (i.e. Tibet-specific) data reveals that immense disparities exist between the maternal and health conditions of the Tibet Autonomous Region and the PRC on average. According to analysis of data from 2009, maternal mortality in the Tibet Autonomous Region (TAR) was over eight times higher than the national average, while infant mortality was nearly three times as high. Data from 2012 reveals that average life expectancy in the TAR was a full 8.5 years less than the PRC's average. Overall, research makes unequivocally clear that the PRC's success in improving maternal and child health has no basis in Tibet Autonomous Region, and in many cases in Tibet as a whole.[6]

A Brief Introduction to Tibet

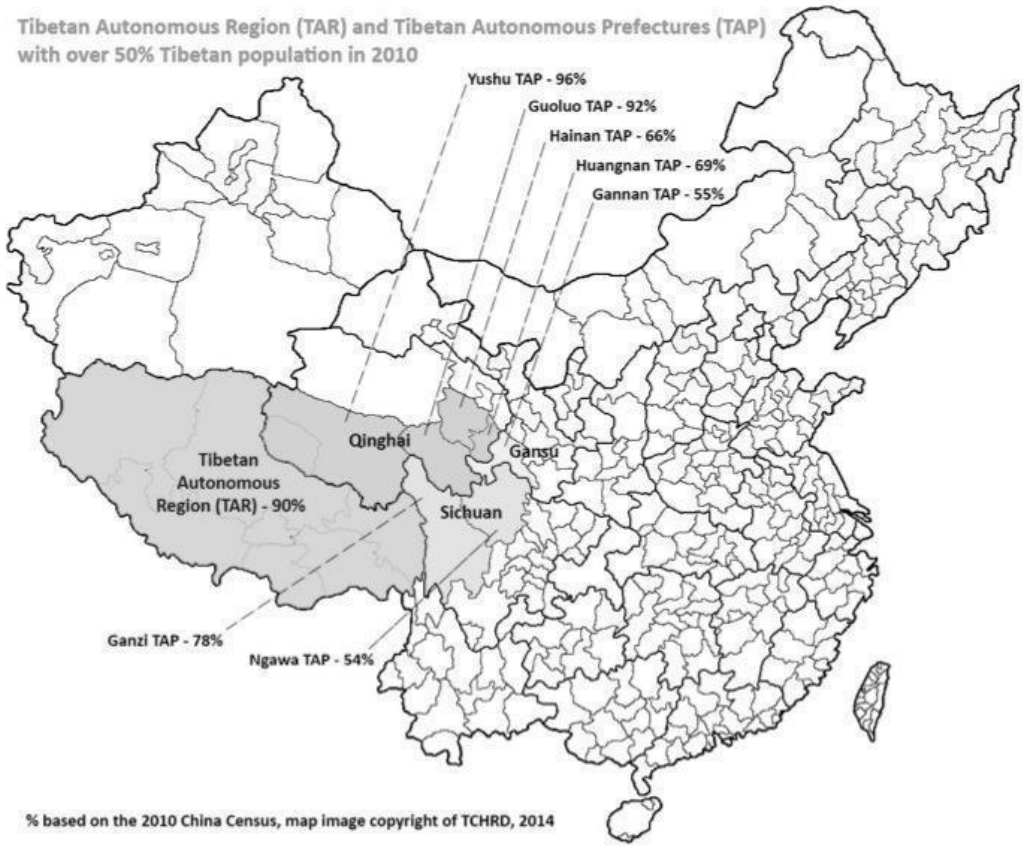
Tibet is made up of the three regions of U-Tsang, Amdo, and Kham. Since the PRC's invasion of Tibet in 1949 however, Tibet has been divided between five regions of the People's Republic of China. U-Tsang and parts of Amdo and Kham lay within the Tibet Autonomous Region (TAR), which has the greatest concentration of Tibetans of any region and makes up over half of the Tibetan population of the PRC. The remainder of Amdo makes up much of Qinghai Province and the western flank of Gansu Province. The remainder of Kham accounts for much of western Sichuan Province and a portion of northwestern Yunnan Province.[7] The name "Tibet," as it is used in this report, indicates the whole of U-Tsang, Amdo, and Kham, not the TAR alone.

[5] A single sentence in the United Nation's 2013 report on China's MDG progress mentions "gaps…across regions" with regard to child mortality. No mention is made of Tibet, which evaluation will show shoulders a vastly disproportionate share of maternal and child mortality.

[6] China National Population and Family Planning Commission. (2010). *China population and family planning yearbook*.509, 513; National Bureau of Statistics of China. (1990, 2000, 2010). *Statistical yearbooks of Gansu Province, Qinghai Province, Sichuan Province, Yunnan Province, and the Tibet Autonomous Region* (1990), (2000), (2010).

[7] Fischer, A. (2002). *Poverty by Design: The Economics of Discrimination*. 11-12. Canada Tibet Committee. Retrieved from http://www.tibet.ca/_media/PDF/PovertybyDesign.pdf

Figure 1. The Tibet Autonomous Region and the Prefectures of Gansu, Qinghai, Sichuan, and Yunnan Provinces with over 50% Tibetan Population (2010)[8]



Geographically, Tibet roughly corresponds with the high altitude Tibetan plateau that runs east out of the Himalaya and into the western PRC. The geography of Tibet is characterized by steep, rough mountain terrain, semi-arid grasslands, an average altitude of 3,500 meters (11, 483 feet), and extreme climate. It is one of the world's harshest environments inhabited by humans. The TAR, at the apex of the Tibetan Plateau, faces especially intense extremes of topography and climate.[9]

Tibetan communities are largely situated in rural, remote, and often inaccessible areas. With population densities between 2.4 and 7.8 persons per square kilometre, the TAR and Qinghai Province are the most sparsely populated regions in the PRC by a very wide margin. Gansu, Sichuan, and Yunnan Provinces are also relatively sparsely populated, with population densities between 14% and 41% of the national average.[10] Tibetans mostly rely on subsistence agriculture or herding for their

[8]National Bureau of Statistics of the People's Republic of China (2010) *National Population Census*. Department of Population and Employment Statistics.
[9] Qinye, Y. & Du, Z (2004). *Tibetan Geography*. Guangdong: China Intercontinental Press.
[10] 2013 China National Statistical Yearbook, *supra* note 1, at Chapter 3-7.

livelihoods.[11]However, since 2006, government-led urbanization schemes and large-scale, forcible resettlements of Tibetan nomads have continuously changed the nature of Tibetan demography and economy.[12]

A Note on Statistical Sources

The quantitative and qualitative data analysed in this report are drawn from a variety of sources, including the Bureau of Statistics of the PRC, international organizations (primarily the United Nations, World Health Organization, and World Bank), NGOs currently operating in Tibet, scholarly research on Tibet, and numerous scientific field surveys. This report also incorporates some qualitative data obtained from a TCHRD survey of recent refugees from Tibet and NGO workers with experience working in Tibet. Data used in risk assessment and indicator analysis (Chapters IV and V) largely rely upon statistics from the National Bureau of Statistics of China (NBSC). Though the validity of NBSC data cannot be confirmed and has on numerous occasions been called into question by the international community,[13] it is the most comprehensive available data concerning maternal and child health in Tibet. Still, results based upon NBSC data should be treated with caution.

Finally, it is essential to note that although this report analyses data concerning maternal and child health from Gansu, Qinghai, Sichuan, and Yunnan Provinces, data from the Tibet Autonomous Region is arguably the most representative by far of the Tibetan experience in all five Tibetan regions of the PRC. This is because while Tibetans make up a large percentage of the TAR's total population (90% in 2010), they make up a much smaller percentage of the total populations of Gansu, Qinghai, Sichuan, and Yunnan Provinces.[14] Accordingly, the aggregate provincial data of these four provinces is highly biased by the population-weight of their large non-Tibetan populations. Additionally, the significant geographic, socioeconomic, educational, and cultural similarities that are shared across the Tibetan communities of all five regions permit accurate comparison between conditions in the TAR and the four other Tibetan regions. For these two reasons, conditions in the TAR very probably speak more to conditions of Tibetan communities in Gansu, Qinghai, Sichuan, and Yunnan Provinces than those provinces' data itself.[15]

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[11] Dickerson, T., Simonsen, E. & Samen, A. (2010). Pregnancy and village outreach Tibet: a descriptive report of a community and home-based maternal-newborn outreach program in rural Tibet. *The Journal of Perinatal & Neonatal Nursing*. 24(2): 114.

[12] Tibetan Centre for Human Rights and Democracy (2014). *Resettlement is displacement: a right based perspective on the internally displaced in Tibet*. Dharamsala, India.

[13] Holz, C.A. (2013). *The quality of China's GDP statistics*. Hong Kong University of Science and Technology. DOI: http://dx.doi.org/10.2139/ssrn.2362779

[14]National Bureau of Statistics of the People's Republic of China (2010) *National Population Census*. Department of Population and Employment Statistics.

[15] Fischer, A. (2011). *The Great Transformations of Tibet and Xinjiang: a comparative analysis of rapid labour transitions in times of rapid growth in two contested minority regions of China*. Paper presented at conference: 'Challenging the Harmonious Society: Tibetans and Uyghurs in Socialist China.' 5. Copenhagen: Nordic Institute of Asian Studies. 20-21 May; Fischer, *supra* note 2.

II. The Right to Health

A. "The Right to the Highest Achievable Standard of Health"

"The right to the highest achievable standard of physical and mental health," commonly known as "the right to health," is a universal human right declared in the 1948 Universal Declaration of Human Rights (UDHR) that is recognized by a host of long-standing international and regional agreements.

The right to health is the right to a variety of goods, services, facilities, and conditions necessary to achieve the highest attainable standard of health.[1] It is comprised of three essential elements: the underlying determinants of health, a system of healthcare, and four conditions. The underlying determinants of health are those goods, services, and conditions that aid in maintaining a high level of wellbeing. According to the United Nations Committee on Economic, Social, and Cultural Rights (CESCR), the most influential monitor of the right to health in contemporary international human rights law, they include: adequate supplies of safe food and water, good nutrition, housing, sanitation, healthy living and working conditions, health-related information and education.[2]Genetics and lifestyle choices are also considered underlying determinants of health for the way in which they shape the individual's health. It is important to note that, because these two factors are outside the direct control of States, the right to the highest achievable standard of health is not equivalent to the right to be healthy.[3] Instead, the right to health guarantees the right to the greatest standard of health achievable within the boundaries of individual biology and lifestyle.

The second essential element of the right to health is access to a system of healthcare. According to the CESCR, the minimum essential level of the right requires access to essential primary healthcare (preventative, curative, and rehabilitative), healthcare insurance, essential medicines, reproductive, maternal, and child healthcare, information and education on relevant health issues, and immunization against and control of major infectious diseases.[4]

The third component is comprised of four conditions under which the determinants of health and the system of healthcare are to be provided. The conditions are: 1.) availability, 2.) accessibility, 3.) acceptability, and 4.) good quality.[5] Under the condition of availability, all health-related goods, services, and facilities must be available to the entirety of the population in sufficient quantity. The condition of

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[1] United Nations Committee on Economic, Social and Cultural Rights (CESCR), *General Comment No. 14: The Right to the Highest Attainable Standard of Health*, 11 August 2000, E/C.12/2000/4, 2, retrieved from http://tbinternet.ohchr.org/_layouts/treatybodyexternal/ TBSearch.aspx?TreatyID=9&DocTypeID=11 [*hereinafter* CESCR General Comment No. 14].

[2] Human Rights Fact Sheet No. 31: The Right to Health (Office of the United Nations High Commissioner for Human Rights, Geneva, June 2008), 3, retrieved from http://www.ohchr.org/Documents/Publications/Factsheet31.pdf [*hereinafter* HR Fact Sheet No. 31].

[3] *Id*. at 5.

[4] CESCR General Comment No. 14, *supra*note 1, at 5, 7, 13.

[5] *Id*. at 4-5.

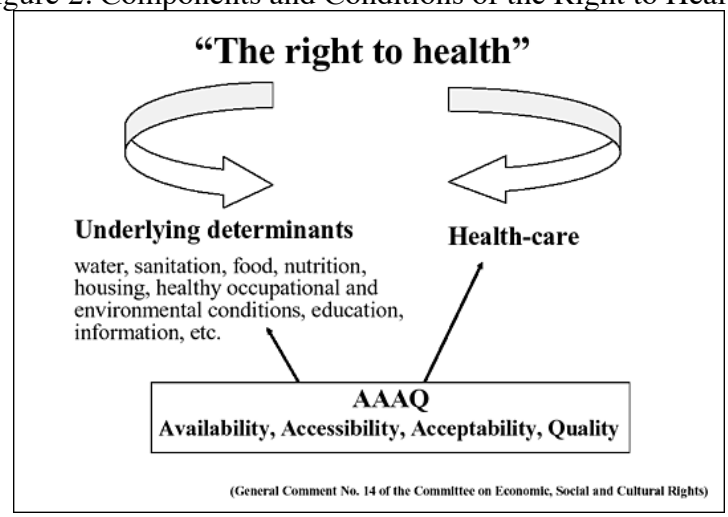
accessibility requires that they be physically accessible (within a safe distance), and economically accessible (financially affordable). Health-related goods, services, and facilities must be respectful of medical ethics, age, gender, and culture. Finally, they must be medically and scientifically appropriate, and of good quality.

Two guiding principles of human rights are also fundamental to fulfilling the right to health. The first is the principle of non-discrimination. General Comment No. 14 from the CESCR states that, "the Covenant proscribes any discrimination in access to health care and underlying determinants of health, as well as to means and entitlements for their procurement…which has the intention or effect of nullifying or impairing the equal enjoyment or exercise of the right to health."[6]

The second guiding principle is that of equality. The CESCR states, "With respect to the right to health, equality of access to health care and health services has to be emphasized. States have a special obligation to provide those who do not have sufficient means with the necessary health insurance and health-care facilities…"[7] The CESCR further asserts that States parties must make special provisions for disadvantaged communities. General Comment No. 14 states, "[Healthcare] has to be based on the principle of equity, ensuring that these services…are affordable for all, including socially disadvantaged groups. Equity demands that poorer households should not be disproportionately burdened with health expenses as compared to richer households."[8]

Therefore, the right to the highest achievable standard of health is fulfilled when the underlying determinants of health and a system of healthcare are applied under the conditions of availability, accessibility, acceptability, and good quality, in accordance with the fundamental principles of non-discrimination and equity.

Figure 2. Components and Conditions of the Right to Health[9]



[6] *Id*. at 6.
[7] *Id*.
[8] *Id*. at 4.
[9] *Id*. retrieved from http://www.who.int/mediacentre/factsheets/fs323/en/

Women, Children, and the Right to Health

Given that women face unique health concerns, women are afforded expanded rights and special protections under the right to health. According to the ICESCR, the 1979 Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW), the 1995 Beijing Platform for Action, and the 1995 Programme of Action of the International Conference on Population and Development, States are obligated to ensure the following for their female populations: equal access to health-care and family planning services,[10] access to those goods and services related to pregnancy and the post-natal period, including emergency obstetric care, adequate nutrition, and paid leave,[11] access to health-related goods and services for women living in rural areas in particular,[12] and control over and the freedom to make decisions regarding their sexual and reproductive health.[13]

Children also face greater obstacles to their enjoyment of the right to health, many times as a result of their on-going physical and mental development and their lack of control over health-related decision-making. According to the ICESCR and the 1989 Convention on the Rights of the Child, States are obligated to ensure the following: that infant and child mortality, malnutrition, and child disease rates are reduced;[14] that infants and children have access to primary and preventative healthcare; and that the young have access to breastfeeding, adequate nutrition, a sanitary environment, and health education.[15]

B. The Right to Health in International Law

Since 1946, the right to health has received continuous recognition and legitimation in the form of international and regional human rights treaties, declarations, health conferences, and the domestic law of a majority of the world's nations. The right to health is enshrined in the 1948 Universal Declaration of Human Rights (UDHR), which states in Article 25(1), "Everyone has the right to a standard of living adequate for the health and wellbeing of himself and his family, including food, clothing, housing and medical care and necessary social services...."[16]

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[10] Convention on the Elimination of All Forms of Discrimination Against Women, United Nation G.A. Res. 34/180 (New York, 18 Dec. 1979) 1249 U.N.T.S. 13, *entered into force* 3 Sept. 1981, art. 12(1)[*hereinafter* CEAFDAW].
[11] International Covenant on Economic, Social, and Cultural Rights, United Nations G.A. Res. 2200A (XXI) (New York, 16 Dec. 1966) 993 U.N.T.S. 3, *entered into force* 3 Jan. 1976, art. 10(2)[*hereinafter* ICESCR].
[12] CEAFDAW, *supra* note 10, at art. 14.
[13] HR Fact Sheet No. 31, *supra* note 2, at 13.
[14] Convention on the Rights of the Child, United Nations G.A. Res. 44/25 (New York, 20 Nov. 1989) 1577 U.N.T.S. 3, *entered into force* 2 Sept. 1990, art. 24(2)(a), 24(2)(c)[*hereinafter* CRC].
[15] Id. at art. 24(2)(e), 24(2)(f).
[16]Universal Declaration of Human Rights, United Nations G.A. Res. 217A (III), U.N. Doc. A/810 art. 25(1) (1948) [*hereinafter*, UDHR].

In contemporary international human rights law, the 1966 International Covenant on Economic, Social, and Cultural Rights (ICESCR) is commonly understood to be the central legal instrument for the protection of the right to health however. Areas of particular concern with regard to the right to health are outlined in Article 12(2), which states,

> "The steps to be taken by the States Parties to the present Covenant to achieve the full realization of this right shall include those necessary for:
> (a) The provision for the reduction of the stillbirth-rate and of infant mortality and for the healthy development of the child;
> (b) The improvement of all aspects of environmental and industrial hygiene;
> (c) The prevention, treatment and control of epidemic, endemic, occupational and other diseases;
> (d) The creation of conditions which would assure to all medical service and medical attention in the event of sickness."[17]

A number of additional international treaties recognize and protect the right to health with regard to specific groups of people, including, among others, Article 5(e)(iv) of the 1965 International Convention on the Elimination of All Forms of Racial Discrimination, Articles 11(1)(f), 12, 14(2)(b) and 14(2)(h) of the 1979 Convention on the Elimination of All Forms of Discrimination Against Women, Article 24 of the 1989 Convention on the Rights of the Child, Articles 28, 43(e), and 45(c) of the 1990 International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families, and Article 25 of the 2006 Convention on the Rights of Persons with Disabilities.

Treaty bodies tasked with monitoring such international covenants have played an increasingly important role in the agreements' interpretation, and in providing guidance for their implementation. Of the content published by such treaty bodies, General Comment No. 14, released by the Committee on Economic, Social, and Cultural Rights (CESCR) in 2000, is a particularly valuable elaboration of the normative content of the right to health, States parties' associated obligations, and its implementation at the national level.[18]

A broad number of international health conferences and declarations also affirm the right to health and lend additional support to its realization. The Millennium Development Declaration of 2000, the 1978 International Primary Health Conference, and the Declaration of Alma-Ata that succeeded it each reaffirms international commitment to the right to health. Finally, in addition to international and regional agreements, the right to health has been formally incorporated into the constitutions of 115 nations.[19]

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[17] *Id*. art. 12(2).
[18] General Comment No. 14(2000) may be accessed in full at http://tbinternet.ohchr.org/_layouts/treatybodyexternal/TBSearch.aspx?TreatyID=9&DocTypeID=11
[19] Human Rights Fact Sheet No. 31, *supra*note 2, at 10.

The body of international agreements outlined above has firmly established the right to health as a universal human right in international law by two means. First, as international conventions are widely considered to be the primary expression of international law, the numerous and widely ratified international treaties recognizing the right to health have served to incorporate it into international law. It is important to note however that the proscriptions of such treaties are legally binding only upon those States that formally sign and ratify them.[20]

International customary law provides a strong second basis for the right to health's establishment as a *universally* binding human right. Though customary law has historically been difficult to establish in the international legal community, strong arguments have been made for the inclusion of the right to health in customary law. According to Section 102 of the Restatement (Third) of Foreign Relations Law of the United States, "Customary international law results from a general and consistent practice of states followed by them from a sense of legal obligation."[21] The two elements necessary to establish customary law therefore are 1.) widespread practice by States, and 2.) *opinio juris* – State practice undertaken out of a sense of legal obligation. The first element is satisfied by the widespread ratification of international, regional, and national covenants and constitutions, all of which recognize the right health because they demonstrate a "general and consistent practice of states." The second element is also fulfilled: States' have upheld the right to health as a result of obligations arising from human rights treaties, such as the ICESCR.[22] For example, see Government of South Africa v. Grootbroom (2000).[23]

The Obligations of States

According to the Preamble to the International Convention on Economic, Social, and Cultural Rights and the Vienna Declaration and Programme of Action, the primary responsibility for the protection of human rights is that of the State.[24] It is in their capacity as the primary protectors of human rights therefore, that every State must fulfil the obligations set out by the universal human right to health, regardless of its ratification (or the lack thereof) of relevant international human rights treaties.

The right to health imposes three types of obligations on States. The first is the obligation to respect every human being's right to health. This entails refraining from interfering with an individual's right to health, either directly or indirectly. The second is the obligation to protect, which requires that States prevent third parties from interfering

[20] Kinney, E. (2001). The international human right to health: What does it mean for our nation and world? *Indiana Law Review*, 34(4), 1459-1464.
[21] Restatement (Third) of Foreign Relations Law of the United States, Section 102 (1987).
[22] Kinney, *supra* note 20, at 1464.
[23] *Government of South Africa v. Grootbroom*, Constitutional Court of South Africa, Case CCT11/00, 4 October 2000 (3rd International Human Rights in Context 2007), pp. 334-335.
[24] Vienna Declaration and Programe of Action (1993) Adopted by the World Conference on Human Rights 25 June 1993. Article 5.

with the enjoyment of the right to health. The third obligation is the fulfilment of the right to health. According to the ICESCR's General Comment No. 14, this obligation requires that States adopt "appropriate legislative, administrative, budgetary, judicial, and promotional and other measures to fully realize the right to health."[25]

The CESCR has established a set of ten core minimum obligations arising from the right to health. In order to meet these obligations, States parties must ensure:

1.) "Access to health facilities, goods and services on a non-discriminatory basis, especially for vulnerable or marginalized groups;"
2.) "Access to the minimum essential food which is nutritionally adequate and safe, to ensure freedom from hunger to everyone;"
3.) "Access to basic shelter, housing and sanitation, and an adequate supply of safe and potable water;"
4.) "Essential drugs, as from time to time defined under the WHO Action Programme on Essential Drugs;"
5.) "Equitable distribution of all health facilities, goods and services;"
6.) "Reproductive, maternal (pre-natal as well as post-natal) and child health care;"
7.) "Immunization against the major infectious diseases occurring in the community;"
8.) "Measures to prevent, treat and control epidemic and endemic diseases;"
9.) "Education and access to information concerning the main health problems in the community, including methods of preventing and controlling them;"
10.) "Appropriate training for health personnel, including education on health and human rights."[26]

Special Legal Protections for Women and Children

Article 3 of the ICESCR states that, "The States Parties to the present Covenant undertake to ensure the equal right of men and women to the enjoyment of all economic, social and cultural rights set forth in the present Covenant."[27] Article 12(1) of the 1979 Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) focuses the ICESCR's provision of non-discrimination and equality, stating, "States Parties shall take all appropriate measures to eliminate discrimination against women in the field of health care in order to ensure, on a basis of equality of men and women, access to health-care services, including those related to family planning. "[28]

Article 10(2) of the ICESCR requires the States parties to protect women's rights, stating, "Special protection should be accorded to mothers during a reasonable period before and after childbirth."[29] Article 12(2) of the CDAW expands again upon the

[25] CESCR General Comment No. 14, *supra*note 1, at 9.
[26] CESCR General Comment No. 14, *supra*note 1, at 12-13.
[27] ICESCR, *supra* note 11, at art 3.
[28] CEAFDAW, *supra* note 10, art. 12(1).
[29] ICESCR, *supra* note 11, at art. 10(2).

ICESCR provision in stating, "States Parties shall ensure to women appropriate services in connection with pregnancy, confinement and the post-natal period…"[30] Finally, Article 14 of the CDAW affords even greater right to health protections for women living in rural areas, requiring that States parties ensure "women in rural areas…participate in and benefit from rural development" and "have access to adequate health-care facilities…counselling and services in family planning."[31]

With regard to children, Article 10(3) of the ICESCR states, "Special measures of protection and assistance should be taken on behalf of all children and young persons without any discrimination for reasons of parentage or other conditions."[32] Article 12(2)(e) of the ICESCR makes special provisions for infant health, asserting that States must make "…provision[s] for the reduction of the stillbirth-rate and of infant mortality and for the healthy development of the child."[33] Article 24(1) of the 1989 Convention on the Rights of the Child (CRC) explicitly recognizes the right to health of children, stating, "States Parties recognize the right of the child to the enjoyment of the highest attainable standard of health and to facilities for the treatment of illness and rehabilitation of health. States Parties shall strive to ensure that no child is deprived of his or her right of access to such health-care services."[34]

Finally, Article 24(2) of the CRC sets out specific measures that States parties must take in order to fulfil the obligations of the right to health with regard to children. The obligations are:

1.) To diminish infant and child mortality;
2.) To ensure the provision of necessary medical assistance and health care to all children with emphasis on the development of primary health care;
3.) To combat disease and malnutrition, including within the framework of primary health care, through, inter alia, the application of readily available technology and through the provision of adequate nutritious foods and clean drinking water, taking into consideration the dangers and risks of environmental pollution;
4.) To ensure appropriate prenatal and post-natal health care for mothers;
5.) To ensure that all segments of society, in particular parents and children, are informed, have access to education and are supported in the use of basic knowledge of child health and nutrition, the advantages of breastfeeding, hygiene and environmental sanitation and the prevention of accidents[35]
6. To develop preventive healthcare, guidance for parents and family planning education and services.

[30] CEAFDAW, *supra* note 10, at art. 12(2).
[31] *Id*. at art. 14.
[32] ICESCR, *supra* note 11, at art. 10(3).
[33] *Id*. at art. 12(2)(e).
[34] CRC, *supra* note 14, at art. 24(1).
[35] *Id*. at art. 24(2).

C. The Right to Health in the People's Republic of China

The Right to Health in Domestic Chinese Law

The clearest recognition of the human right to health within domestic Chinese law appears in the Constitution of the People's Republic of China, although the right is not explicitly recognized. Article 21 of the Constitution is most relevant, stating,

> "The State develops medical and health services, promotes modern medicine and traditional Chinese medicine, encourages and supports the setting up of various medical and health facilities by the rural economic collectives...and promotes health and sanitation activities of a mass character, all for the protection of the people's health."[36]

Article 45 of the Constitution makes a similar commitment to those in ill health, stating, "Citizens of the People's Republic of China have the right to material assistance from the State and society when they are old, ill or disabled. The State develops social insurance, social relief and medical and health services that are required for citizens to enjoy this right."[37]

Articles 4, 25, 26, 37, 42, 48, 49, and 51 of the Constitution also contain provisions relevant to the right to health, on topics such as equality, freedom of person, occupational health, and women and children's rights. The most explicit recognition of human rights in Chinese law however was added to Article 33 of the Constitution as a part of the 2004 amendment process; it declares, "The State protects and preserves human rights."[38]

Though the Constitution recognizes and makes provisions for many elements of the right to health, disparities in *de jure*(law in the book) and *de facto*(law in practice) manifestations of the law in the PRC have precluded the Constitution from supporting the realization of the right to health. Two judgments from the Supreme People's Court (SPC) of the PRC (made in 1955 and 1986,) established that the Constitution is not a legitimate basis for legal action or court rulings.[39] As a result, human rights-related provisions of the Constitution are effectively non-enforceable, and Constitutional litigation upholding human rights is almost non-existent in the PRC.[40]

The primary *enforceable* protections for human rights exist within a series of Chinese laws and regulations. At present, roughly thirty laws explicitly treat human rights, a small number of which are immediately relevant to the right to health, such as

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[36]Constitution of the People's Republic of China. Adopted by the 5th National People's Congress, 4 Dec. 1982, amended 14 Mar. 2004, art. 21. Retrieved from http://www.npc.gov.cn/englishnpc/Constitution/node_2825.htm

[37]*Id*. at art. 45.

[38]*Id*. at art. 33.

[39] Guo, S. (2009). Implementation of human rights treaties by chinese courts: Problems and prospects. *Chinese Journal of International Law*, 8(1), 171-172. DOI:10.1093/chinesejil/jmp004

[40]*Id*.

1994 Law on Maternal and Infant Healthcare.[41] A majority of these laws fall in to in five categories: criminal justice, labour laws, laws related to education and marriage, laws protecting special groups (such as women and children), and laws protecting a variety of civil and political rights. Most such laws were developed during the period following the PRC's "opening up" to the West under Deng Xiaoping in 1978, when the nation's body of law, legal system, and legal profession each expanded dramatically.[42] The expansion of the PRC's legal system since the late 1980s was accompanied by an on-going process of legal reform, which has served to develop the rule of law and grant additional rights and protections to citizens. For example, greater restrictions have been placed on some State agencies, and Chinese jurisprudence is beginning to address topics previously seen as forbidden.[43]

Though legal reform has made progress since 1978, it is still widely understood that the Chinese legal system is dominated by the Communist Party of China (CPC), and that Party policy takes precedence over law. Evidence of this phenomena is well-documented: for example, Chinese government officials regularly intervene in court rulings, senior judicial officials often prioritize Party interests over adherence to the law, and lawyers defending clients against government prosecutors are often abused or arrested (over 500 by the end of 2002 alone).[44] Broadly put, the PRC's legal system continues to serve to legitimize rule by the Communist Party of China.[45] The failures of the Chinese legal system to protect human rights, therefore, are the result of the system's subordination to CPC interests, the limited means by which laws protecting human rights are enforced, and the fact that not all human rights are protected under domestic Chinese law.[46]

The People's Republic of China and the Right to Health in International Law

From the *procedural* perspective, the record of the People's Republic of China on the right to health in international law appears to be satisfactory. However, a closer examination of its relationship to human rights in international law (especially as expressed within the United Nations), fails to substantiate the PRC's claim that it genuinely supports human rights.[47]

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[41] Wan, M. (2007). Human rights lawmaking in China: domestic politics, international law, and international politics. *Human Rights Quarterly*. 29(3): 727-753.
[42] *Id*., at 728, 738-739.
[43] *Id*. at 748; Keith, R.C. & Lin, Z. (2001). Law and justice in China's new marketplace. 61-89.
[44] Wan, *supra* note 41, at 746-747.
[45] *Id*. at 752.
[46] Guo, *supra* note 39, at 170.
[47] Scats, S. & Breslin, S. (2012). *China and the international human rights system*. Chatham House (Royal Institute of International Affairs). Retrieved from http://www.chathamhouse.org/sites/files/chathamhouse/public/Research/International%20Law/r1012_sceatsbreslin.pdf

Since 1980, the PRC has become much more active in international human rights law, becoming a party to a majority of international human rights treaties,[48] as well as a party to almost every international treaty concerning the right to health, including the ICESCR (1966), the Convention on the Elimination of All Forms of Racial Discrimination (1965), the Convention on the Elimination of All Forms of Discrimination Against Women (1979), the Convention Against Torture and Other Cruel, Inhumane, or Degrading Treatment and Punishment (1987), and the Convention on the Rights of the Child (1989).

In addition, the PRC is a party to the Constitution of the World Health Organization (1946), and has endorsed a number of important declarations regarding the right to health, including the Universal Declaration of Human Rights (1948), the Vienna Declaration and Programme of Action (1993), the Beijing Declaration and Platform for Action (1995), the Millennium Declaration (2000), and the Rio Political Declaration on Social Determinants of Health (2011).

Though the PRC has indicated its nominal support for human rights in the international arena by signing and ratifying human rights treaties, its voting record on human rights issues at the United Nations has generally been defined by low levels of engagement, lack of leadership on human rights issues, strong defences of its own human rights record, and a will to weaken human rights accountability measures in international law.[49]

[48] The People's Republic of China is a party to eight, and a signatory to two of the thirteen core international human rights treaties emphasized by the Office of the High Commissioner for Human Rights (OHCHR).
[49] Seats and Breslin, *supra* note 47, at 37, 55.

III. Healthcare Under Chinese Rule

A. History of Healthcare in the PRC

The history of the modern Chinese healthcare system is defined by experimentation and change. In just one hundred years, healthcare in the PRC has transitioned from the haphazard care of pre-Communist China, to the broad centrally administered systems of the Mao years, to the liberal reforms of the 1980s and 1990s, to the contemporary compromise between public and private systems.

In the last 65 years especially, healthcare and the general health of the Chinese people has improved dramatically. In 1950, the male and female life expectancy was 42 years and 46 years, and the male and female infant mortality rate (IMR) were 146 and 130. In 2000, life expectancy rested at 71 and 75 years of age, and infant mortality rates had dropped to 21 and 29.[1] Decreases in disease during this same period have changed the PRC's epidemiological profile from a nation frequently swept by epidemics of infectious and communicable diseases, to a nation where chronic illness has largely replaced the epidemics of the past.[2]

The Era of Market Reform (1978-2003)

With the death of Mao Zedong in 1976 and the rise to power of Deng Xiaoping, the PRC underwent critical social and economic transformations. Beginning in 1978, it began to privatize its economy, decentralize political and economic power, prioritize rapid economic development, and open to the global market. These changes were quickly reflected in the nation's health care system, beginning with its decentralization and partial privatization.

Beginning in the early 1980s, the responsibility for funding and providing health care was transferred from the central government to provincial and local authorities. As the central government's support for healthcare declined (its share of national health care spending dropping from 32% in 1978 to 15% in 1999),[3] local governments were forced to develop alternative methods of healthcare financing. Taxation swiftly became a primary means of doing so and exacerbated existing inequities in health care provision. In wealthy, urban areas, where per capita income tended to be significantly higher, residents enjoyed better medical care than residents of rural areas, where decreased funding resulted in a lack of services and poor quality care. From the regional perspective, the

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[1] Feng, W. & Mason, A. (2004) *The demographic factor in China's transition*. Paper presented at China's Economic Transition conference, Pittsburgh, 39. Retrieved from: www2.hawaii.edu/~amason/Research/FengMason.2004.pdf

[2] Daemmrich, A. (2013). The political economy of health care in China: negotiating public and private. *SpringerPlus*, 2(448), 3. DOI:10.1186/2193-1801-2-448

[3] Blumenthal, D., & Hsiao, W. (2005) Privatization and its discontents: The evolving Chinese healthcare system. *The New England Journal of Medicine*, 353(11), 1168.

PRC's highly developed coastal provinces received much better care than the nation's interior and western provinces, including Tibet.[4]

As central government support for health care continued to wane, new private health facilities were established, and the private health sector gained an increasing share of the market.[5] Though the central government continued to enforce price caps on medical goods and services, it allowed mark-ups on both, and both public and private providers came to rely upon the sales of expensive drugs and medical testing in order to cover their costs.

During the same period, the PRC's health insurance systems were also rapidly decentralized, and as State priorities and resources were reallocated in order to facilitate economic development, the government-sponsored system of health insurance suffered greatly. Insurance coverage in urban areas steadily declined until it reached 50% in 1998.[6] In rural areas, the phasing out of the commune system and the decrease in State support of the health system led to the collapse of rural health insurance in the mid-1980s. The rate of rural resident coverage dropped to 5%, leaving hundreds of millions uninsured. As late as 2003, 80% of rural residents were still without insurance.[7]

In the face of a collapsed insurance system, both urban and rural residents self-insured, relying upon savings, family, and friends in order to cover medical costs out-of-pocket.[8] As a result, many were swept into poverty or neglected to seek care: in 2000 the Ministry of Health reported that medical costs paid out-of-pocket were responsible for 25% of all new cases of poverty,[9] and according to a 2003 national survey, nearly 50% of respondents had foregone medical care as a result of "financial concerns."[10]

Despite decreased access to healthcare, the unavailability of health insurance, the decrease in public health initiatives, and the rising cost of care that defined this period, the general health of the Chinese population continued to improve during this period. Male and female life expectancy rose from 66 and 69 in 1982 to 71 and 74 in 2000. Male and female infant mortality rates dropped from 36 and 34 in 1982 to 21 and 29 in 2000.[11] Though the rates of some communicable and infectious diseases persisted or even increased (such as STDs, HIV/AIDS, hepatitis B, and tuberculosis), the burden of disease

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[4] Barber, Sarah L.& Yao, L. (2010) Health insurance systems in China: a briefing note. World Health Report, Background Paper 37. 7. Retrieved from http://www.who.int/healthsystems/topics/financing/healthreport/37ChinaB_YFINAL.pdf

[5] Blumenthal & Hsiao, *supra* note 3, at 1166.

[6] Wagstaff, A., Lindelow, M., Wang, S. & Zhang, S. (2009). *Reforming China's Rural Health System*, 28. The World Bank. Retrieved from: http://siteresources.worldbank.org/CHINAEXTN/Resources/318949-1248160372290/rural_health_full_report_en.pdf

[7] *Id*.

[8] Daemmrich, *supra* note 2, at 4.

[9] *Id*.

[10] Yip, W., & Mahal, A. (2008) The health care systems of China and India: Performance and future challenges. *Health Affairs*, 27(4), 921-932.

[11] Feng & Mason, *supra* note 1.

largely shifted from infectious and communicable diseases to chronic, non-communicable diseases such as heart disease and cerebrovascular disease.[12]

Healthcare at the Turn of the Century (2003 Onward)

Faced with increasing evidence of medically induced poverty, regional inequalities in healthcare, the growing unaffordability of care, and the outbreak of SARS in 2003, the government of the PRC began to reprioritize healthcare and reassert its role in the healthcare system beginning in early to mid 2000s.

The government's re-entry into the healthcare industry began with substantive investment in medical infrastructure, in order to remedy the shortage of primary care facilities; between 2003 and 2008, the number of general hospitals increased by 23% and specialist hospitals increased by over 50%. During the same period, the central government undertook a number of reforms aimed at reducing medical costs and improving access and utilization of care services. Finally, between 1998 and 2007, it established three new systems of health insurance.[13] State spending alone during this period is an indicator of its recommitment to providing healthcare: between 2000 and 2010, the government's share of total healthcare spending increased from 15% to 28.6%.[14]

Finally, in April of 2009, the Central Committee and the State Council jointly released "Opinions on Deepening of Health Care System Reform" – a significant healthcare reform initiative to be led by the newly established Healthcare Reform Leadership Committee. The aim of the 2009 reform was to achieve a system of healthcare comprised of four elements: public health, service delivery, medical security, and essential pharmaceuticals.

B. The Chinese Healthcare System

The Contemporary Healthcare System

After moving from the strong, centrally administered system of the Mao era and the decentralized, market-based system of the reform era, the Chinese healthcare system has developed into a mixed public-private system. Today, the central and local governments of the PRC play the leading role in the support and administration of the nation's healthcare. The government's involvement in healthcare is led by the National Health and Family Planning Commission (NHFPC), which is aided in varying capacities by other government stakeholders, including the Ministries of Finance, Health, Human

[12] Eggleston, K. (2012) Health care for 1.3 billion: An overview of China's health system. Stanford University Asia Health Policy Program working paper #28. Retrieved from: http://iis-db.stanford.edu/pubs/23668/AHPPwp_28.pdf
[13] Barber & Yao, *supra* note 4, at 7-9.
[14] Daemmrich, *supra* note 2, at 4.

Resources & Social Security, Civil Affairs, Commerce, and the National Development and Reform Commission. Though the healthcare system is directed by the central government, its' administration has largely been decentralized among the PRC's thirty-one provinces.[15]Therefore, the goals, parameters, and policy directives regarding health care initiatives generally originate with the central government, while the actual process of implementation is the responsibility of the lower levels of government administration.[16]

Table 1. Government Administration of Healthcare

Government Stakeholders	Responsibilities
National Health & Family Planning Commission	Upholds family planning policy; supervises and administrates public health and medical care; resource allocation.
National Development & Reform Commission	Oversight of national healthcare reform; setting prices of medical services and drugs.
Ministry of Finance	Healthcare investment and financial support; health insurance subsidies.
Ministry of Health	Public health safety; supervision of food and drugs safety; operation of rural medical cooperatives; essential medicine policy.
Ministry of Human Resources & Social Security	Operation of the UEBMI and URBMI health insurance programs.
Ministry of Civil Affairs	Poverty alleviation; medical aid for the poor.
Ministry of Commerce	Drug retail and wholesale; administration of pharmacies; distribution of medicine and medical equipment.

**Source: Ministry of Health, 2012; Hu & Ljungwall (2013) China's Healthcare System – Overview and Quality Improvements.*

Each of the major sectors within the healthcare industry, including service delivery, insurance, public health, and research and development, are subject to some level of support and administration by central or provincial governments. In the arena of service delivery, for example, provincial, prefectural, and county governments own, fund, and run a large majority of Chinese hospitals.[17] Furthermore, the central government sets limits on hospital revenue and regulates the prices of medical procedures, services, and

[15] Hu, S. & Ljungwall, C. (2013) *China's healthcare system: Overview and quality improvements*. Swedish Agency for Growth Policy Analysis, 9-10. Retrieved from: www.tillvaxtanalys.se/download/18.5f097bc113eacc3d6d513e/1369033621751/direct_response_2013_03.pdf

[16] Eggleston, *supra* note 12, at 11.

[17] Daemmrich, *supra* note 2, at 6.

drugs, according to the "Yellow Book" price list it maintains.[18] In the arena of health insurance, county and municipal governments fund and operate three health insurance programs established by the central government, under which the vast majority of insured Chinese citizens are covered.[19]

Though government plays the dominant role in the PRC's health care system today, the relatively modest role of the private sector is continuing to gain a greater share of the Chinese healthcare market. The government of the PRC actively encourages the investment of private capital in the arena of health services delivery, especially in the establishment of healthcare facilities.[20] Private hospitals accounted for 8.2% of all outpatient visits, and 18.6% of all visits to community health centres were to private facilities. The government of the PRC also encourages private investment in commercial health insurance, although as of 2010 the private sector share of the PRC's insurance market was relatively low at 7%.[21]

The delivery of medical care in the PRC's healthcare system is administered through a three-tiered system. The first is a system of public and private hospitals, ranging from primary care hospitals to tertiary care facilities and specialists' institutions. The second system is a broad network of public and private primary healthcare facilities, including urban community health centres, rural township health centres, and village clinics. The third system is comprised of public health institutions.[22]

The Contemporary Health Insurance System

The passing of the PRC Law on Social Insurance in late 2010 formally initiated a comprehensive system of social insurance for the first time in the PRC's history. The law, which took effect in 2011, formally instated the decentralized, tripartite system of basic medical insurance that had been developing since the end of the 1990s.[23]

The first of two medical insurance programs available to residents of urban areas is the Urban Employee Basic Medical Insurance (UEBMI). Established in 1998 and administered by the Ministry of Human Resources and Social Security, this system covers all urban employees, including those of private and state-owned enterprises, government workers, and the staff of social organizations and non-governmental organizations (NGOs). Participation in the UEBMI is mandated, and members receive coverage for hospitalization and in-patient medical costs; outpatient costs and deductibles are either paid out of the individual's personal medical savings account or out-of-pocket. Annual premiums are set by the central government and are collected in the form of an 8% payroll tax. Employers are responsible for 6%, 70% of which enters a fund pooled at

[18] *Id*.
[19] Hu & Ljungwall, *supra* note 15, at 14.
[20] Hu & Ljungwall, *supra* note 15, at 7, 19.
[21] Hu & Ljungwall, *supra* note 15, at 13-15.
[22] *Id*. at 10.
[23] Zhang, L. (2010) China: Law on social insurance passed. *The Global Legal Monitor*. Retrieved from: www.loc.gov/lawweb/servlet/lloc_news?disp3_l205402348_text

the city or prefectural level and is used to cover members' medical costs, and 30% of which is contributed to the employee's personal medical savings account. Employees themselves are responsible for the other 2%, 100% of which enters their personal medical savings account.[24] The central government also sets coverage ceilings (currently set at six times the average annual local wage),[25] as well as reimbursement limits, which have been demonstrated to decrease at higher levels of care.[26]

The second medical insurance program available to urban residents is the Urban Resident Basic Medical Insurance (URBMI). Established in 2007, the URBMI is also administered by the Ministry of Human Resources and Social Security, and offers medical coverage to urban residents not eligible for the UEBMI, including children, students, retirees, the elderly, and the poor and disabled. Contributions to the URBMI are collected by household, and are pooled at the municipal or prefectural level. As of 2013, government subsidies constituted 80% of the fund.[27] Coverage limits are set by the central government for the URBMI program as well; as of 2011, the limit was six times the local per capita disposable income.[28] Premiums under the URBMI are lower than that of the UEBMI, though the compensation packages are as a result less generous.[29]

The third program in the PRC's health insurance system is the New Cooperative Medical Scheme (NCMS). Established in 2002 and administered by the Ministry of Health, the NCMS is a voluntary program for residents of the PRC's rural areas. The NCMS primarily covers inpatient care; deductibles and outpatient care are commonly paid out of pocket, or in some cases out of an established personal medical savings account.[30] Funding for the NCMS comes from a combination of individual contributions pooled at the county level, and subsidies from both local and central governments. Like the URBMI, government subsidies made up 80% of the total fund as of 2013.[31] Local government sets reimbursement and coverage limits for the NCMS as well and as of 2012, the coverage limit under the program was eight times the average annual farm income.[32] Like the URBMI, premiums under the NCMS are lower than that of the UEBMI, though the compensation less generous.[33]

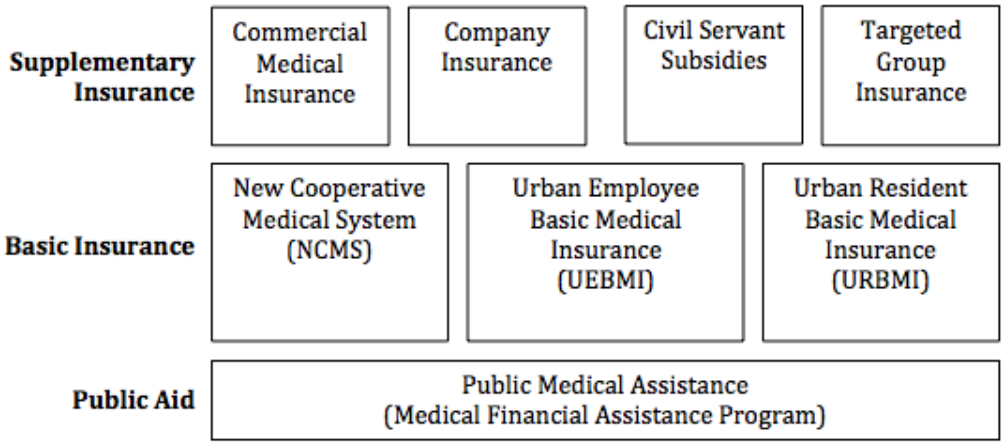
In addition to the UEBMI, the URBMI, and the NCMS, various supplementary insurance systems exist as well, including subsidies for civil servants, company insurance, targeted group insurance (such as union member benefits), and commercial insurance. Though private insurance has expanded quickly since 2000, it is in large part

[24] Hu & Ljungwall, *supra* note 15, at 11.
[25] Daemmrich, *supra* note 2, at 5.
[26] Barber & Yao, *supra* note 4, at 16.
[27] Hu & Ljungwall, *supra* note 15, at 12.
[28] Daemmrich, *supra* note 2, at 5.
[29] Eggleston, *supra* note 12, at 9.
[30] Barber & Yao, *supra* note 4, at 15.
[31] Hu & Ljungwall, *supra* note 15, at 12-13.
[32] Daemmrich, *supra* note 2, at 5.
[33] Eggleston, *supra* note 12, at 9.

only accessible to the wealthy, and by 2010 only 7% of the nation was covered in part by commercial insurance.[34]

Poor households participating in the URBMI and the NCMS may also be eligible for support from the Medical Financial Assistance (MFA) program. Introduced to rural areas in 2006 and urban areas in 2008, the MFA is administered by the Ministry of Civil Affairs, and covers the individual's share of his or her URBMI or NCMS contribution. The program is financed by each level of government, from sources such as the welfare lottery and fund interest income.[35]

Figure 1. Structure of Insurance Systems



**Source: Hu (2011) Chinese Healthcare System: Structure, Function, Strengths and Weaknesses; Hu & Ljungwall, (2013) China's Healthcare System – Overview and Quality Improvements.*

[34] Hu & Ljungwall, *supra* note 15, at 14.
[35] Barber & Yao, *supra* note 4, at 10, 15, 19.

IV. Awaiting Crisis: Women and Children at Risk in Tibet

The evaluation of risk is an important early step in developing an understanding of a population's health. Risks to maternal and child health can develop from numerous spheres of the personal and public health domains, including individual-level risk factors such as biomedical, genetic, and behavioural characteristics; socio-economic and demographic-level risk factors such as income level and discrimination; structural-level risk factors such as healthcare system efficacy; and environmental-level risk factors such as crowding and level of available sanitation.[1]The World Health Organization (WHO) has determined that the following four factors are most indicative of a population's maternal and child health risk[2]: 1.) Poverty, 2.) Distance from healthcare providers and institutions, 3.) Access to health information, and 4.) Cultural practices.

The following assessment will briefly evaluate these four risk factors with a view to identifying the level risk facing women and children in Tibet today. Where a risk factor's exact metrical data is unavailable(such as Risk Factor 3, for which no data exists concerning unmet need for reproductive health information in the PRC), metrics as similar as possible will be assessed in order to render a meaningful approximation.

Risk Factor 1: Poverty

Whether at the individual, family, or community level, social and economic resources are the major non-biogenetic currency by which good health is achieved and maintained. Not only do such resources increase access to high quality healthcare, but they also often decrease vulnerability to other health risks. For this reason, socioeconomically disadvantaged communities very often face greatly increased health risks and bear disproportionate burdens of disease, mortality, and ill health.[3]

At the time of the writing of this report, disaggregated, up-to-date data concerning rates of poverty in Tibet and the PRC were unavailable. Five metrics highly indicative of income level (if not poverty precisely) may nonetheless yield meaningful results regarding Tibet's level of risk associated with poverty. They are: total and disposable annual incomes of urban households per capita, total annual income of rural households

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[1] Australian Institute for Health and Welfare. *Risk factors to health*. (2013). Retrieved from http://www.aihw.gov.au/risk-factors; Centers for Disease Control and Prevention. (2014). *Social determinants of health*. Retrieved from http://www.cdc.gov/socialdeterminants/ Definitions.html

[2] World Health Organization. (2014). *Fact sheet no. 348: Maternal mortality*. Retrieved from http://www.who.int/mediacentre/factsheets/fs348/en/

[3] Blakely, T., Hales, S. & Woodward, A. *Assessing the distribution of health risks by socioeconomic position at national and local levels*. World Health Organization Environmental Burden of Disease Series, No. 10. Retrieved from http://www.who.int/quantifying_ehimpacts/ publications/ebd10.pdf?ua=1

per capita, household savings, and percentage of total regional population that received a minimum living allowance.[4]

Tables 2, 3, and 4 below show the five Tibetan regions' risk-related metrics ranked those of all 31 provinces of the PRC. A score of "1" represents that a province ranked highest numerically relative of all regions, while a score of "31" represents that a province ranked the lowest. For example, in Table 2 below, the TAR receives a score of "18" for the metric "% of Total Population Received Minimum Living Allowance"; this score indicates that the TAR had the 18th highest percentage of its population receiving the minimum living allowance, thereby ranking 18th in the nation.

Table 2. Risk Factor 1: Poverty (2012)

	% of Total Population Received Minimum Living Allowance	Per Capita Annual Income of Urban Households (Total, yuan)	Per Capita Annual Income of Urban Households (Disposable, yuan)	Per Capita Annual Income of Rural Households (Total, yuan)	Savings of Urban and Rural Households (yuan)	Level of Relative Risk
PRC (Avg.)	1.90 (-)	25,471 (-)	23,219 (-)	8,495 (-)	30,787 (-)	(-)
TAR	1.56 (18)	20,224 (26)	18,028 (27)	5,719 (27)	13,130 (31)	High to Very High
Gansu	3.43 (4)	18,499 (31)	17,566 (30)	4,507 (31)	19,593 (23)	Very High
Qinghai	4.01 (2)	19,747 (29)	17,157 (31)	5,364 (29)	22,250(22)	Very High
Sichuan	2.31 (10)	22,328 (19)	20,307 (22)	7,001 (21)	24,069 (19)	Neutral to Moderate
Yunnan	2.01 (14)	23,000 (14)	21,075 (14)	5,417 (28)	16,623 (29)	Neutral to Moderate

*Values in parentheses indicate national rank out of 31 provinces, where a value of 1 indicates the largest/highest result and a value of 31 indicates the lowest.

***Source: 2013 China National Statistical Yearbook*

As late as 2012, the Tibet Autonomous Region (TAR), with very low relative levels of urban and rural annual income, a very low relative level of household savings, and a moderate percentage of the region receiving the minimum living allowance, was at a high to very high level of poverty-related risk.[5]Both Gansu and Qinghai Provinces, with high percentages of total regional population receiving the minimum living allowance,

[4] According to the 2013 China National Statistical Yearbook, minimum living allowances are allotted by various administrative levels of the Chinese government to members of those families whose average family income is below "a minimum local standard."

[5]Bureau of Statistics of the People's Republic of China. (2013). *2013 China national statistical yearbook*.Chapters 11-3, 11-14, 11-21, 21-27 [*hereinafter 2013 China National Statistical Yearbook*].

very low levels of urban annual income (total and disposable), very low levels of rural annual income, and low levels of urban and rural savings, had extremely high relative risks for health as a result of poverty.[6]During the same period, Sichuan Province, with lower national rankings but numerical results near national averages according to all five indicators, was at a neutral to moderate risk as a result of poverty conditions. Yunnan Province, with near national average levels of annual urban income but very low relative levels of annual rural income and household savings, was also at a neutral to moderate level of poverty-related health risk.[7]

It is important to note that because Han Chinese residents of each of the Tibetan provinces hold a far greater share of the primary and public sector jobs,[8] it can be assumed that the socioeconomic status of many Tibetan populations is significantly lower than PRC statistics above suggest.[9,10]Though the average standard of living of Tibetan populations has undoubtedly improved during the last two decades, the marginal gains made have occurred within the broader context of 1.) Tibetans' increasing economic marginalization from lucrative sectors of the economy, and 2.) Tibetans' bearing a greatly disproportionate burden of socioeconomic inequality overall.[11] Furthermore, though the PRC as a whole has experienced rapid economic socioeconomic growth in the past two decades, the inequality in regional growth has increased, with Western regions (including the five Tibetan regions) lagging furthest behind.[12] For these reasons, it may be inferred that the aggregate provincial data used in the above assessment masks the high level of actual risk to maternal and child health faced by Tibetan populations in all five regions.

Risk Factor 2: Distance from Healthcare Facilities

A community's level of physical access to healthcare facilities is a second risk factor of great consequence for maternal and child health. Because shorter distances to healthcare facilities and thorough coverage of transportation infrastructure often ensure faster interventions in the health crises of children and pregnant women, physical access to care is crucial. Poor women and children in rural areas where healthcare facilities are sparse have the least likelihood of receiving appropriate care, and large disparities in the health conditions of rural and urban areas have been established in numerous contexts -

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[6]*Id*.
[7] *Id*.
[8] Fischer, A. (2011). The Great Transformations of Tibet and Xinjiang: a comparative analysis of rapid labour transitions in times of rapid growth in two contested minority regions of China. Paper presented at conference: '*Challenging the Harmonious Society: Tibetans and Uyghurs in Socialist China*.' 20-21 May. 26-27, 29-30. *Copenhagen:* Nordic Institute of Asian Studies; Ma, R. (2011). *Population and Society in Contemporary Tibet*. Hong Kong: Hong Kong University Press. 163-164.
[9] Fischer, *supra* note 26, at 26-27, 29-30.
[10] According to Andrew Fischer, the low proportion of Tibetans in high-paying, long-term, and social security benefit-paying public sector jobs is likely accountable for the growing socioeconomic inequality within urban areas of the Tibetan Autonomous Region.
[11]Fischer, *supra*note 9, at 29-31.
[12] Liang, J., Li, X., Dai, L., Zeng, W., Li, Q., Li, M., Zhou, R. et al. (2012). The changes in maternal mortality in 1000 counties in mid-western China by a government-initiated intervention.*PLoS ONE*. 7(5). e37458. 6-8. DOI:10.1371/journal.pone.0037458

including that of the PRC itself previous to its famous "Barefoot Doctor" rural health campaign in the 1960s and 1970s.[13]

Table 3. Risk Factor 2: Distance from Healthcare (2012)

	Area (km^2)	Population Density (Persons/km^2)	Rural Population (as a % of Total Regional Population)	Density of Healthcare Institutions (HCI/km^2)	Density of Roadways (km of road per km^2)	Level of Relative Risk
PRC (Avg.)	309,569 (-)	405.20 (-)	46.57 (-)	.221 (-)	.85 (-)	(-)
TAR	1,230,000 (2)	2.36 (31)	77.25 (1)	.005 (31)	.05 (31)	Highest
Gansu	454,000 (7)	58.05 (27)	61.25 (3)	.058 (26)	.29 (27)	Very High
Qinghai	720,000 (4)	7.74 (30)	52.56 (12)	.008 (30)	.09 (30)	Very High
Sichuan	487,700 (5)	167.83 (22)	56.47 (7)	.059 (25)	.60(21)	High
Yunnan	394,000 (8)	116.02 (24)	60.69(4)	.157(20)	.56 (22)	High

*Values in parentheses indicate national rank out of 31 provinces, where a value of 1 indicates the largest/highest result and a value of 31 indicates the lowest.

***Source: 2013 China National Statistical Yearbook (Chapters 3-7, 16-4, 21-1); The State of China Atlas*

The level of risk associated with distance from healthcare services is measured in Table 3 according to five metrics: total provincial area, population density, proportion rural population, density of healthcare institutions, and density of roadways. Geodemographic survey reveals that the five Tibetan regions are very large, very sparsely populated, largely rural-living, and relatively undeveloped with regard to healthcare infrastructure and transportation. These characteristics indicate that Tibetan populations reside in some of the most remote and inaccessible regions of the PRC.[14]

[13] Humphreys, J. & Wakerman, J. (2008). *Primary health care in rural and remote Australia: Achieving equity of access and outcomes through national reform*. Australia National Health and Hospital Reform Commission. Retrieved from: http://www.health.gov.au/internet/nhhrc/publishing.nsf/content/16f7a93d8f578db4ca2574d7001830e9/$file/primary%20health%20care%20in%20rural%20and%20remote%20australia%20-%20achieving%20equity%20of%20access%20and%20outcomes%20through%20national%20reform%20(j%20humph.pdf; World Health Organization. (2014). *Fact sheet no. 348: Maternal mortality*. Retrieved from http://www.who.int/mediacentre/factsheets/fs348/en/

[14] 2013 China National Statistical Yearbook, *supra* note 5, at Chapters 3-7, 16-4; Benewick, R. & Donald, S. (2009).*The state of China atlas*. Berkeley: University of California Press.

The results of the above five metrics reveal that physical access to healthcare constitutes a major health risk for all regions of Tibet. Sichuan and Yunnan Provinces, with low population, healthcare facility, and roadway densities, are at high relative risk. Gansu Province, with very low densities in all four categories, is at a very high relative risk. Qinghai Province, which has the second lowest densities across three categories, and the Tibet Autonomous Region, with the lowest density in all categories (except proportion of rural population, for which it has the highest) are at the highest level of relative risk in the PRC.[15]

Risk Factor 3: Lack of Information

The low availability of health-related information is another risk factor with important consequences for a community's health. Greater availability of health information enables community members to make health-positive changes in behaviour, avoid environmental risks to health, and make better use of preventative services.[16] Higher levels of education have been strongly correlated with positive changes in health behaviour and with better health outcomes.[17]

Three metrics indicative of the availability health information will be assessed. The first - people per specialized health institution, is a rough measure of the likelihood that citizens of a province were exposed to maternal and child health information. In this context, "specialized health institutions" include women and child healthcare facilities and family planning service centres. The second metric - illiteracy rate, is a measure of the percentage of persons age twenty-five and above unable to read, and speaks to the likelihood that citizens of a province are able to utilize available health information.[18]

[15] *Id*., at Chapters 3-4, 16-4, and 21-1; Benewick, R. & Donald, S. (2009). *The state atlas of China*. Berkeley: University of California Press.
[16] National Poverty Center. (2007). *Policy Brief #9: Education and Health*. Retrieved from http://www.npc.umich.edu/publications/policy_briefs/brief9/
[17] Anderson, T.M., Feinstein, L., Hammond, C., Sabates, R. & Sorhaindo, A. (2006). *Measuring the effects of education on health and civic engagement: Proceedings of the copenhagen symposium*. Chapter 4. Retrieved from https://www1.oecd.org/edu/innovation-education/ 37425753.pdf
[18] 2013 China National Statistical Yearbook, *supra* note 5, at Chapter 21 - Explanatory Notes.

Table 4. Risk Factor 3: Lack of Healthcare Information (2012)			
	Density of Specialized Health Institutions	Illiteracy Rate	Level of Relative Risk
PRC (Avg.)	112,192.9 (-)	4.96 (-)	(-)
TAR	21,663.4 (31)	34.81 (1)	Moderate
Gansu	76,941.8 (26)	8.68 (4)	Neutral
Qinghai	39,529.0 (30)	12.24 (2)	Neutral to Moderate
Sichuan	113,270.7 (16)	6.85 (8)	Neutral to Moderate
Yunnan	89,768.8 (20)	8.34 (5)	Neutral

*Values in parentheses indicate national rank out of 31 provinces, where a value of 1 indicates the largest/highest result and a value of 31 indicates the lowest.

***Source: 2013 China National Statistical Yearbook (Chapter 21-1); Statista.com*

Tibetans' risk for maternal and child health issues as the result of health information inaccessibility vary by region. With the greatest density of specialized health institutions in the nation, the Tibet Autonomous Region should have the lowest relative risk as a result of the lack of health information. However, the ability of TAR citizens to utilize this information greatly is greatly inhibited by its illiteracy rate of 34.81% - the highest in the nation by 22.6 percentage points. As such, the TAR is at a moderate relative risk. Gansu and Yunnan Provinces, with high illiteracy rates (much nearer the national average than that of the TAR,) and high densities of specialized health institutions, are at a moderate relative risk as a result of information inaccessibility. Qinghai Province, with a very high concentration of health institutions and a high illiteracy rate (significantly lower than that of the TAR,) has a neutral to moderate level of risk. Sichuan Province, with a near average density of healthcare institutions and a slightly higher than average illiteracy rate, has a neutral health risk as the result of information inaccessibility.[19]

Risk Factor 5: Cultural Practices

Cultural belief deeply influences a community's understanding of the body, health, and illness. By extension therefore, cultural belief plays a major role in shaping health practice and healthcare seeking behaviour, from preventative practice to diagnosis and treatment.[20]Such is the case in Tibet, where cultural beliefs strongly shape

[19]2013 China National Statistical Yearbook, *supra* note 5, at Chapter 21-1; Statista. (2014). *Illiteracy rate in China in 2012 by region*. Retrieved from http://www.statista.com/statistics/278568/ illiteracy-rate-in-China-by-province/

[20] Baker, R.C., Jacquez, F. & Vaughn, L.M. (2009). Cultural health attributions, beliefs, and practices: Effects on healthcare and medical education. *Open Medical Education Journal*. Vol. 2, 64-74. Retrieved from http://benthamopen.com/tomededuj/articles/

perceptions and health practice related to pregnancy and birth. Because quantifying the maternal and child health risk associated with cultural belief is extremely complex, this assessment of risk relies upon a number of qualitative field studies that are indicative of the level of risk to which cultural beliefs expose Tibetan communities.

Recent studies focusing on the cultural beliefs of Tibetan women have identified a number of beliefs concerning antenatal and postnatal care, birth practice, and early childhood care that prompt health practices which constitute risks to health. A 2010 study conducted in the TAR's southeastern Gyamda County, for example, found that a belief that sharing news of one's pregnancy before three months could lead to miscarriage often led Tibetan women to avoid seeking antenatal care before this time. In some cases, doing so allowed pregnancy-related health complications such as dangerously high blood pressure and lung infection to develop. The same study also found that although some Tibetan families believed that though immunizations could prevent disease, others believed that it could harm newborn children, and therefore avoided immunizing their newborns.[21]

A 2005 study conducted in four rural counties of the TAR's Lhasa Prefecture found that a belief that spirits of sickness and death reside in and pass through hospitals leads many Tibetan women to avoid giving birth in hospitals. Given that home births carry increased risks for complication and mortality, this belief clearly prompts a practice that increases risks for both mother and child. The same study found that a belief that malevolent spirits sometimes accompany strangers into homes was a deterrent to seeking the help of skilled birth attendants, which greatly compounds the risk of home birth. A third finding determined that some Tibetan women give birth outside the living spaces of the home (in locations such as a tent, storage room, or animal shed,) as a result of a common belief that a form of spiritual contamination present in the blood of childbirth can pollute the home. Because these spaces are often physically much less clean, such practices resulted in greater risks of intrapartum and postpartum infection.[22]

A second 2005 study found that a belief in the nutritional and symbolic significance of yak butter and barley flower led to the introduction of these foods into the diets or newborns before two months earlier than suggested by medical "best practice." As these "mixed" feeding practices increase the risk of often-fatal bacterial infection and diarrheal disease in newborns, they increase newborn health risks.[23]

V002/SI0016TOMEDEDUJ/64TOMEDEDUJ.pdf

[21]MDG Achievement Fund in China& Minzu University of China. (2010). *Study on traditional beliefs and practices regarding maternal and child health in Yunnan, Guizhou, Qinghai and Tibet*. CDPF Publication No. 16. Retrieved from http://www.unfpa.cn/sites/unfpa/files/media/ mch_in_em_areas_advocacy_toolkit-en.pdf

[22] Adams, V., Chertow, J., Craig, S., Miller, S. & Varner, M. (2005). Having a "safe delivery": Conflicting views from Tibet. *Health Care for Women International*. 26:827-851. DOI: 10.1080/07399330500230920

[23] Craig, S.R. (2005). Pregnancy and childbirth in Tibet: Knowledge, perspectives, and practices. In H. Selin & P.K. Stone (Eds.), *Science across cultures: The history of non-western science*. Vol. 5, pp. 145-160. DOI: 10.1007/978-90-481-2599-9_13

It is important to note that the cultural beliefs and associated practices discussed above are not shared by every community in Tibet, and that perceptions of traditional and Western biomedicines are continually developing. For example, home delivery occurring outside family living spaces has declined in recent years.[24] However, cultural and religious practices such as those discussed above do continue to influence both maternal and childcare practices on broad scales. It may be ascertained therefore, that with regard to cultural practice, the five provinces with heavy Tibetan provinces have greatly increased health risks.

Conclusions

The preceding risk assessment reveals that geographic, socioeconomic, and cultural conditions introduce high levels of risk for maternal and child health across the five Tibetan regions of the PRC.Tibetan populations in the TAR and Qinghai Province, which are highly impoverished, geographically isolated from healthcare, poorly educated, and express significant cultural disincentives to health services utilization, have some of the highest risk in the PRC for maternal and child health. Though the assessment finds decreased levels of apparent risk in Gansu, Sichuan, and Yunnan Provinces, this result reflects the population weight of these regions' majority non-Tibetan populations. Given that the geographic, socioeconomic, educational, and cultural conditions of these three provinces are very similar to those of the TAR and Qinghai Province, it may be inferred that the aggregate provincial data used in this risk assessment masks the actual level of risk faced by Gansu, Sichuan, and Yunnan Province's Tibetan populations specifically.[25] In all likelihood, these provinces face the same high level of risk for maternal and child health that the TAR and Qinghai Province do.

[24] *Study on traditional beliefs and practices regarding maternal and child health in Yunnan, Guizhou, Qinghai and Tibet*, *supra*note 21, at 32.

[25] Fischer, A. (2011). *The Great Transformations of Tibet and Xinjiang: a comparative analysis of rapid labour transitions in times of rapid growth in two contested minority regions of China*. Paper presented at conference: 'Challenging the Harmonious Society: Tibetans and Uyghurs in Socialist China.' 5. Copenhagen: Nordic Institute of Asian Studies. 20-21 May; Fischer, A. (2002). *Poverty by Design: The Economics of Discrimination*. 11-12. Canada Tibet Committee. Retrieved from http://www.tibet.ca/_media/PDF/PovertybyDesign.pdf

V. In the Shadow of Development: The State of Maternal and Child Health in Tibet

One of the most reliable methods for assessing the condition of a population's maternal and child health is the evaluation of health indicators. Health indicators quantify key aspects of public health and provide valuable insight into health systems' efficacy. The World Health Organization (WHO) has articulated 11specific indicators of maternal and child health that reveal the quality of conditions and reflect the degree to which the healthcare system meets the needs of its female and child populations.[1]These indicators serve as the primary basis for the following assessment of maternal and child health in the Tibet.

At the time of the writing of this report, data disaggregated by province was the most specific and comprehensive available concerning Tibetan populations in the PRC. For this reason, the following analysis will evaluate indicators at the provincial level for the Tibet Autonomous Region (TAR) and Gansu, Qinghai, Sichuan, and Yunnan Provinces. Data disaggregated by province allowed for the evaluation of six of the 11 WHO indicators. They are: Indicator1 - Maternal Mortality Ratio (MMR); Indicator 2 - Under-five child mortality, including the proportion of newborn deaths; Indicator 3 - Children under five who are stunted; Indicator 5 - Antenatal care coverage (at least four times during pregnancy); Indicator 7 - Skilled attendant at birth; and Indicator 8 - Postnatal care for mothers and babies within two days of birth.[2] Data concerning the other five indicators was available only in national aggregate and thereby offer little insight into conditions in Tibet specifically.

In the following assessment, Indicators 1, 2, 3, 5, 7, and 8are each examined in order to reveal the broadest available picture of maternal and child health in Tibet. In some cases, available data does not precisely match indicator metrics; in these cases, metrics as similar as possible have been assessed. For example, though data on stunting in Tibet (Indicator 3) was not available at the time of the writing of this report, the evaluation measures levels of severe malnutrition instead. Considering that severe malnutrition the overwhelming cause of stunting,[3]measurement of severe malnutrition allows for a meaningful, if imperfect, approximation of Indicator 3.

A. Evaluation of Seven Health Indicators

Indicator 1: Maternal Mortality Ratio (MMR)

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[1]World Health Organization. (2014). *Accountability for women's and children's health, recommendation 2: Health indicators*. Retrieved from http://www.who.int/woman_child_accountability/progress_ information/recommendation2/en/

[2]*Id*.

[3] World Health Organization. (2012). *Stunting policy brief*. 1. Retrieved from http://www.who.int/nutrition/topics/ globaltargets_stunting_policybrief.pdf

Maternal mortality ratio measures the risk of maternal death associated with pregnancy. Specifically, MMR is the ratio of recorded maternal deaths per 100,000 live births during a specific time period. "Maternal death" is defined as female death caused by issues related to or aggravated by pregnancy or childbirth, or within 42 days of the termination of a pregnancy.[4,5]

Table 5. Maternal Mortality Ratios (MMR) of Tibet, the PRC, Eastern Asia and the World (2009, 2010)

	MMR (2009)	MMR (2010)
World	-	210
Eastern Asia	-	37
PRC (Avg.)	-	29
TAR	232.2 (1)	-
Gansu	36.2 (6)	-
Qinghai	48.2 (3)	-
Sichuan	21.9 (9)	-
Yunnan	41.5 (4)	-

**Values in parentheses indicate national rank out of 31 provinces, where a value of 1 indicates the largest/highest result and a value of 31 indicates the lowest.*
***Source: China National Population and Family Planning Yearbook (2010); WHO (2012) Trends in Maternal Mortality 1990-2010.*

In 2009, the MMRs of Gansu, Qinghai, and Yunnan Provinces were near national and "East Asia" averages. The MMR of Sichuan, at 21.9, was lower. Still, their MMRs were the 6th, 3rd, 9th, and 4th highest of all provinces in the PRC.[6]

In 2009, the MMR of the Tibet Autonomous Region (TAR) was extremely high and the highest in the PRC at 232.2. Not only was it *eight times higher* than the national average (28.84) just one year later, but it was 181.8 maternal deaths(78%)higher than the

[4]World Health Organization. (2011). *Monitoring maternal, newborn and child health: Understanding key progress indicators*. 11. Retrieved from http://www.who.int/healthmetrics/news/monitoring_maternal_newborn_child_health.pdf
[5] For more information on the WHO's eleven maternal and child health indicators, see *Monitoring Maternal, Newborn and Child Health: Understanding Key Progress Indicators*, at http://www.who.int/healthmetrics/news/monitoring_maternal_newborn_child_health.pdf
[6]China National Population and Family Planning Commission. (2010). *China population and family planning yearbook*.Maternal Health Care by Region (continued), 509 [*hereinafter* China Population and Family Planning Yearbook (2010)].

region with second highest MMR.[7] The TAR's MMR was also six times higher than the regional average for East Asia, and notably higher (9.6%) than the world MMR in 2010 (210).[8]

A Note on PRC Mortality Data

The actual maternal mortality ratios of Tibetan populations in these five regions are likely far higher than the government figures above suggest, for three primary reasons. First, unreported maternal death is a serious issue for the Tibetan regions of the PRC and results in significant deflation of mortality estimates. The issue of unreported death is especially severe in the TAR, where as late as 2014 no publicly available data existed from the Provincial Maternal Mortality Surveillance System – the primary system by which data concerning maternal and child mortality is collected.[9] The issue is of unreported death is also problematic for Tibetan populations more broadly: rural and remote areas have been proven to have the highest numbers of unreported births,[10] and Tibetans populations inhabit some of the most sparsely-populated,[11] remote, and inaccessible regions in the nation.[12]Furthermore, because unreported births are proven more likely to result in death,[13] a relatively large proportion of the unreported births in Tibetan populations involve maternal or infant death. Finally, the PRC's systematic collection of health data is generally poor: according to a 2012 WHO report, it is "lacking good complete civil registration data," especially with regard to "attribution of cause of death."[14]

Second, the validity of government MMR statistics cannot be confirmed, as the PRC has a poor reputation for the handling of empirical data.[15] For example, the integrity of government MMR data is jeopardized by the fact that rewards and punishments are distributed by the central government to governments at lower

[7] *Id*., at 509.
[8] World Health Organization. (2012). *Trends in maternal mortality 1990 to 2010*. Annex 2, 37. Retrieved from https://www.unfpa.org/webdav/site/global/shared/documents/publications/2012/Trends_in_maternal_mortality_A4-1.pdf
[9] Gan, X.L., Hao, C.L., Dong, X.J., Alexander, S., Dramaix, M.W., Hu, L.N. & Zhang, W.H. (2014). Provincial maternal mortality surveillance systems in China. *BioMed Research International*. Volume 2014. http://dx.doi.org/10.1155/2014/187896
[10] Gan et al. (2014). Provincial maternal mortality surveillance systems in China. *BioMed Research International*. Article 187896. dx.doi.org/10.1155/2014/ 187896
[11] Benewick, R. & Donald, S. (2009). *The state of China atlas*. Berkeley: University of California Press.
[12]Bureau of Statistics of the People's Republic of China. (2013). *2013 China national statistical yearbook*.Chapter 3-7 [*hereinafter* 2013 China National Statistical Yearbook].
[13] Gan et al. (2014). Provincial maternal mortality surveillance systems in China. *BioMed Research International*. Article 187896. dx.doi.org/10.1155/2014/ 187896
[14] World Health Organization. (2012). *Trends in maternal mortality 1990 to 2010*. Appendices 2 & 3, 49-50. Retrieved from https://www.unfpa.org/webdav/site/global/shared/documents/publications/2012/Trends_in_maternal_mortality_A4-1.pdf
[15] Childs, G. (2008). *Tibetan transitions: historical and contemporary perspectives on fertility, family planning, and demographic change*. 190. Leiden: Brill.

administrative levels based on mortality outcomes.[16] Researchers have reported first-hand cases where health workers refrained from reporting deaths for fear of exceeding "good"(i.e. acceptable) MMRs and IMRs. Others report a case in which a county-level health official in the TAR intimated that he may only report "approved" statistics concerning infant mortality.[17]

Finally, significant disparities between routine data collected by government agencies and targeted data from high-quality academic survey are widely acknowledged.[18] A 2004 study from Qinghai Province's Yushu Tibetan Autonomous Prefecture found for example that within a 19-month period during which there were 103 live births, 3 maternal deaths occurred. Though a formal MMR for the region was not calculated, this rate of maternal death suggests that MMR in the rural areas where many Tibetans live are extremely high, and far higher than official statistics report.[19]In 2003, the Health Bureaus of Medrogonkar County (TAR) reported that the maternal mortality ratio of rural areas was between 400 and 500.[20]In 2005, a study found the MMR of Qinghai Province to be 103.5 (as opposed to 48.2 just four years later).[21]

Indicator 2: Under-Five Child Mortality, Including Proportion of Newborn Deaths

Under-five child mortality rate measures the probability that a child born during a specific time period will die before age five, and is fundamental to evaluations of maternal and child health and healthcare. At the time of the writing of this report, disaggregated data concerning under-five child mortality was unavailable. However, because over 60% of under-five child deaths in the PRC occur during infancy, an analysis of infant mortality rate (IMR) alone is a meaningful, if partial, indicator of under-five child mortality.[22]

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[16] You, H., Bogg, L., de Costa, A. & Dong, H. (2014). Rural maternal mortality ratio in China. *The Lancet*. Vol. 2. e451. Retrieved from www.thelancet.com/pdfs/journals/langlo/PIIS2214-109X(14)70232-3.pdf

[17] Fischer, A.M. (2008). "Population invasion" versus urban exclusion in the Tibetan areas of western China. *Population and Development Review*. 34(4): 631-662.

[18] *Id*.

[19] Wellhoner, M., Lee, A.C.C., Deutsch, K., Wiebanga, M., Freytsis, M., Drogha, S., Dongdrup, P. et al. (2011). Maternal and child health in Yushu, Winghai Province, China. *International Journal for Equity in Health*. 10:42. 7. Retrieved from http://www.equityhealthj.com/content/10/1/42

[20] Adams, V., Miller, S., Chertow, J., Craig, S., Samen, A. & Varner, M. (2005). Having a "safe delivery": conflicting views form Tibet. *Health Care for Women International*. 26: 821-851. DOI: 10.1080/07399330500230920

[21] Liu, X., Yan, H. & Wang, D. (2010). The evaluation of "Safe Motherhood" program on maternal care utilization in rural western China: a difference in difference approach. *BMC Public Health*. 10: 5. Retrieved from http://www.biomedcentral.com/1471-2458/10/566

[22] Rudan, I., Chan, K.Y., Zhang, J.S.F, Theodoratou, E., Feng, X.L., Salomon, J., Lawn, J.E. et al. (2010). Causes of death in children younger than 5 years in China. On behalf of WHO/UNICEF's Child Health Epidemiology Reference Group (CHREG). *The Lancet*. 375: 1086-1088.

Table 6. Infant Mortality Rates (IMR) of Tibet, the PRC, and East Asia (2009)	
	IMR
East Asia	23.15
PRC (Avg.)	8.69
TAR	23.51 (1)
Gansu	11.80 (5)
Qinghai	9.36 (13)
Sichuan	7.09 (19)
Yunnan	10.7 (6)

**Values in parentheses indicate national rank out of 31 provinces, where a value of 1 indicates the largest/highest result and a value of 31 indicates the lowest.*
***Source: China National Population and Family Planning Yearbook (2010); http://data.wordbank.org/indicator*

At 23.51, the TAR's infant mortality rate was almost three times higher than the PRC's average IMR in 2009. Like its MMR, the TAR's infant mortality rate was the highest of any province in the PRC in 2009 and 71% greater than that of the province with the second highest IMR.[23]

The IMRs of the four other Tibetan regions were much closer to the national average. For the same reasons outlined in regard to MMR, the actual IMR of Tibetan populations in each region is likely significantly higher than the above government statistics indicate. A number of additional factors exacerbate the issue of under-reporting of infant death in rural areas however. These include: the limited willingness and capacity of healthcare providers to trace high-risk and critically-ill infants, the relatively high rates of abandonment of babies and their consequent high mortality rate, and the low recording rates of infant mortality occurring in the home-birth context.[24,25] These issues are likely very pronounced in Gansu, Yunnan, and Sichuan Provinces, and to a lesser degree Qinghai Province, which are the 3rd, 4th, 7th, and 12th most rural regions in the nation. For the TAR, which is by far the most rural-living region in the PRC, under-reporting of infant death is likely a very serious issue.[26]

[23]China Population and Family Planning Yearbook (2010), *supra* note 6, at 513.
[24] Xu, Y., Zhang, W., Yang, R., Zou, C., & Zhao, Z. (2014). Infant mortality and life expectancy in China.*Medical Science Monitor*. 20:379-385. 383. DOI: 10.12659/MSM.890204
[25] Xiao-Ling, G., et al. (2014). Provincial maternal mortality surveillance systems in China.*BioMed Research International*. Article ID 187896. 8. http://dx.doi.org/10.1155/2014/187896
[26]*Id*.

A second metric that provides important information concerning under-five child mortality is rate of systematic child healthcare. Because systematic child healthcare mitigates the risk of mortality via regular check-ups and interventions in health crises, it too offers valuable insight into under-five child mortality.

Table 7. Percentage of Children Under Ages 3 and 7 Receiving Systematic Healthcare in Tibet and the PRC (2009)

	Under Age 3	Under Age 7
PRC (Avg.)	75.7%	79.7%
TAR	43.5% (31)	41.2% (31)
Gansu	75.6% (16)	74.4% (21)
Qinghai	81.7% (12)	73.3% (24)
Sichuan	77.0% (15)	76.1% (19)
Yunnan	74.9% (17)	79.5% (16)

**Values in parentheses indicate national rank out of 31 provinces, where a value of 1 indicates the largest/highest result and a value of 31 indicates the lowest.*
***Source: China National Population and Family Planning Yearbook (2010)*

In 2009, only 43.5% of children under age three in the TAR received systematic health care; this figure is 32 percentage points lower than the national average and the lowest in the nation. Of all children under age seven in the TAR, only 41.2% received systematic healthcare - almost half the national average and again the lowest percentage in the nation.[27] The rates of systematic health care for children under ages three and seven in Gansu, Qinghai, Sichuan, and Yunnan were much closer to the national average.

Indicator 3: Children Under Five Who Are Stunted

Stunting, the body's failure to reach the optimal height-for-age ratio, is the result of chronic malnutrition and ill health, and is one of the most important indicators of children's health. The prevalence of stunting in a child population is a reflection of a healthcare system's ability to ensure that children adequate nutrition, and is as such a fundamental measure of basic efficacy.[28] At the time of the writing of this report, disaggregated data concerning stunting in children under age five in Tibet was unavailable. However, because stunting is overwhelmingly caused by chronic

[27] China Population and Family Planning Yearbook (2010), *supra* note 6, at 513.
[28] *Monitoring maternal, newborn and child health: Understanding key progress indicators*, *supra* note 4, at 15.

malnutrition, measures of chronic malnutrition in children under age five serve as a meaningful approximation of Indicator 3.

Table 8. Percentage of Children Severely Malnourished in Tibet, the PRC, East Asia and the Pacific (2009)

	% of Children Under Five Severely Malnourished
East Asia and the Pacific	14.3%
PRC (Avg.)	1.66%
TAR	3.58% (3)
Gansu	1.87% (12)
Qinghai	3.01% (6)
Sichuan	1.12% (19)
Yunnan	3.84% (2)

**Values in parentheses indicate national rank out of 31 provinces, where a value of 1 indicates the largest/highest result and a value of 31 indicates the lowest.*
***Source: China National Population and Family Planning Yearbook (2010); http://data.worldbank.org/child-malnutrition/regional-trends*

Compared to the high rate of severe malnutrition in children under age five in East Asia and the Pacific,[29] rates of severe malnutrition in Tibet were relatively low in 2009. However, the disparities between conditions in Tibetan regions and the PRC on average witnessed in Indicators 1 and 2 persist with regard to severe malnutrition. Whereas the national average for under-five malnutrition was 1.66%, that of the TAR was the third highest in the nation and more than twice the national average at 3.58%.At 3.84%, the discrepancy between Yunnan Province and the PRC on average was even greater. Qinghai Province also suffered from relatively high rates of severe child malnutrition at 3.01%. [30]

Indicator 5: Antenatal Care Coverage

Numerous complications in women and children's health may be prevented, detected, and treated during the antenatal period. For this reason, antenatal care is crucial to ensuring the health of pregnant women and the wellbeing of their children. Like

[29] The World Bank. (2014). *Joint child malnutrition estimates*. Retrieved from *http://data.worldbank.org/child-malnutrition/regional-trends*
[30]China Population and Family Planning Yearbook (2010), *supra* note 6, at 513.

MMR, IMR, and the rate of child malnutrition, the rate of antenatal care is a basic measure of the effectiveness of a maternal and child healthcare system.[31]The precise metric by which antenatal care should be evaluated (the rate of women who received four or more antenatal care visits) is widely unrecorded in the international context, and was unavailable for the PRC at the time of the writing of this report.[32]However, the analysis of two closely related metrics - the rate of systematic maternal healthcare and the rate of one or more pre-birth hospital visits, allows for meaningful insight into antenatal care conditions in Tibet.

Table 9. Percentage of Pregnant Women Received Systematic Maternal Healthcare in Tibet and the PRC (2009)

	% of Women Receiving Systematic Maternal Healthcare
PRC (Avg.)	79.3%
TAR	33.3% (31)
Gansu	82.5% (15)
Qinghai	79.4% (19)
Sichuan	82.3% (16)
Yunnan	84.8% (13)

**Values in parentheses indicate national rank out of 31 provinces, where a value of 1 indicates the largest/highest result and a value of 31 indicates the lowest.*
***Source: China National Population and Family Planning Yearbook (2010)*

Because systematic maternal healthcare encompasses antenatal care, it is a valuable alternative metric to Indicator 5. In 2009, only 33.3% of all pregnant women in the Tibet Autonomous Region received systematic maternal healthcare. This rate was the lowest rate of any province and well below half the national average. The systematic care rates of Gansu, Qinghai, Sichuan, and Yunnan provinces were notably higher than that of the TAR - each higher in fact than the national average.[33]

A second metric that offers insight into the prevalence of antenatal care in Tibet is the percentage of women that received one or more pre-birth hospital visits.

[31]*Monitoring maternal, newborn and child health: Understanding key progress indicators*, *supra* note 4, at 19-20.
[32]*Id*.
[33]China Population and Family Planning Yearbook (2010), *supra* note 6, at 508.

Table 10. Percentage of Women Received One or More Pre-Birth Hospital Visits (2009)	
	% of Women Received One or More Pre-Birth Hospital Visits
PRC (Avg.)	91.6%
TAR	66.1% (31)
Gansu	92.6% (18)
Qinghai	81.3% (29)
Sichuan	89.8% (23)
Yunnan	95.3% (12)

**Values in parentheses indicate national rank out of 31 provinces, where a value of 1 indicates the largest/highest result and a value of 31 indicates the lowest.*
***Source: China National Population and Family Planning Yearbook (2010)*

The percentage of women that received one or more pre-birth hospital visits in the TAR in 2009 was notably higher than that of women that received systematic maternal healthcare. At 66.1% however, the TAR's rate was again the lowest in the nation and far below the national average of 91.6%. The rate of pre-birth hospital visits in Gansu, Qinghai, Sichuan, and Yunnan Provinces were significantly higher than that of the TAR.[34]

Indicator 7: Skilled Attendant at Birth

The percentage of live births attended to by a skilled birth attendant is an essential indicator of a health system's ability to deliver adequate care to mothers and their children during perinatal and intrapartum periods. As skilled attendants such as doctors, nurses, and midwives oversee labour, aid in delivery, address birth complications, and care for mothers and newborns after birth, they are crucial to ensuring a safe delivery.[35]At the time of the writing of this report, disaggregated data concerning the percentage of live births attended to by a skilled healthcare provider in Tibet was unavailable. The following evaluation takes into account two metrics that are highly relevant and offer valuable insight into birth attendance in Tibet. The first is the percentage of total deliveries that occurred at a hospital.

[34]*Id.*
[35]*Monitoring maternal, newborn and child health: Understanding key progress indicators*, *supra* note 4, at 25-26.

Table 11. Percentage of Total Deliveries in Hospital (2009)	
	% of Total Deliveries Made in Hospital
PRC (Avg.)	94.9%
TAR	51.7% (31)
Gansu	89.1% (27)
Qinghai	87.0% (28)
Sichuan	89.8% (26)
Yunnan	86.3% (29)

**Values in parentheses indicate national rank out of 31 provinces, where a value of 1 indicates the largest/highest result and a value of 31 indicates the lowest.*
***Source: China National Population and Family Planning Yearbook (2010)*

In 2009, only 51.7% of all deliveries in the TAR occurred at a hospital - just under half the national average of 94.9% and the lowest percentage in all of the PRC. In Gansu, Qinghai, Sichuan, and Yunnan Provinces, rates of hospital delivery surpassed 86%, and were nearer to the national average.[36]Because a large number of unrecorded births are likely to have occurred in absence of a skilled birth attendant in each of these five regions however, the government figures of hospital delivery rate are likely significantly inflated.[37] In the absence of numerical estimates of the severity of the issue of non-recorded birth in Tibet, the lower limit of percentage of deliveries made in a hospital cannot reliably be determined.

A second metric that offers valuable insight into skilled birth attendance is the percentage of all newborns that received inspection by a healthcare professional. Because newborn inspection usually occurs within twenty-four hours of birth by a qualified birth attendant, but not necessarily at a hospital, newborn inspection rate 1.) is strongly correlated with the presence of a skilled attendant during birth, and 2.) broadens the scope of available data beyond the hospital context to almost all births attended by a skilled healthcare provider. Therefore, the newborn inspection rate is likely a strong predictor of the upper limit of the percentage of births attended by a skilled care provider.

[36] *Id.*
[37] See Indicator 1 - *A Note on PRC Mortality Data*.

Table 12. Newborn Inspection Rate (2009)	
	% of Newborns Inspected
Western Pacific Region (Avg.)	92.0%
PRC (Avg.)	85.5%
TAR	54.5% (31)
Gansu	89.4% (14)
Qinghai	66.1% (29)
Sichuan	85.6% (20)
Yunnan	91.9% (11)

**Values in parentheses indicate national rank out of 31 provinces, where a value of 1 indicates the largest/highest result and a value of 31 indicates the lowest.*
***Source: China National Population and Family Planning Yearbook (2010); WHO World Health Statistics Report (2009).*

At 54.5%, the newborn inspection rate of the TAR in 2009 was the lowest in the nation and significantly lower than the national average of 85.5%. Given that newborn inspection is a likely indicator of skilled attendance during birth, it is very unlikely that the rate of total birth attendance in the TAR was higher than 54.5%.[38] Compared to the average rate of skilled birth attendance in the Western Pacific region (92%), the rate of skilled attendance of the TAR is *at least* 37% lower.[39]Though Qinghai Province's inspection rate was similarly low to that of the TAR, those of Gansu, Sichuan, and Yunnan Provinces were notably higher.[40]

Indicator 8: Postnatal Care for Mothers and Babies

According to the World Health Organization, the majority of maternal and infant deaths occur within a few hours of birth - most within the first 48 hours. Therefore, the first forty-eight hours after birth provide the best opportunity for the prevention, detection, and treatment of health complications. For this reason, postnatal care for mothers and children within two days of birth is one of the most fundamental measures of

[38]China Population and Family Planning Yearbook (2010), *supra* note 6, at 513.
[39] World Health Organization. (2009). *World Health Statistics Report*. 17. Retrieved from http://www.who.int/gho/publications/world_health_statistics/EN_WHS09_Full.pdf?ua=1
[40]*Id*.

a health system's ability to provide adequate care for these populations.[41] At the time of the writing of this report, disaggregated data directly addressing this metric was unavailable. However, an analysis of one closely related metric – the percentage of women who received one or more post-birth hospital visits, offers meaningful insight into the state of postnatal care in Tibet.

Table 13. Percentage of Women Received One or More Post-Birth Hospital Visits (2009)

	% of Women Received One or More Post-Birth Hospital Visits
PRC (Avg.)	87.8%
TAR	54.7% (31)
Gansu	89.7% (17)
Qinghai	83.9% (24)
Sichuan	87.5% (21)
Yunnan	93.1% (12)

**Values in parentheses indicate national rank out of 31 provinces, where a value of 1 indicates the largest/highest result and a value of 31 indicates the lowest.*
***Source: China National Population and Family Planning Yearbook (2010)*

In 2009 in the TAR, 54.7% of women who gave birth received one or more post-birth hospital visits. This rate is far below the national average of 87.8%and is the lowest in the nation by a substantial margin (6% below the province with the second lowest rate and 19% below the province with the third lowest rate).[42] The percentages of women that received one or more post-birth hospital visits in Gansu, Qinghai, Sichuan, and Yunnan Provinces were each higher than that of the TAR.[43]

Because the above metric is limited to postnatal care visits to hospitals only, the actualrate of postnatal care (which includes postnatal care visits to qualified non-hospital healthcare institutions,) is likely to be higher in each of the five provinces. In the absence of further disaggregated data however, a full picture of the nature of postnatal care in Tibet remains cannot be made.

[41] *Monitoring maternal, newborn and child health: Understanding key progress indicators*, *supra* note 4, at 27-28.
[42] China Population and Family Planning Yearbook (2010), *supra* note 6, at 508.
[43] *Id*.

A Note on Life Expectancy

Life expectancy is one of the single most representative indicators of the broad state of public health. Life expectancy at birth is a measure of the number of years that a newborn child would live if prevailing mortality conditions at the time of birth continued throughout its lifetime. It is reflective of multiple arenas of public health, including health conditions, health services coverage, and human and physical infrastructure. Most importantly, life expectancy is proven to reflect the broad state of maternal and child health and mortality conditions especially.[44] Though life expectancy is not sensitive to the quality of health during years lived, it is nonetheless an indispensable measurement for gaining insight into maternal and child health.[45]

Table 14. Average Life Expectancies of Persons in Tibet and the PRC (1989, 1999, 2009)

	Average Life Expectancy in Years		
	1989	**1999**	**2009**
PRC (Avg.)	68.55	71.4	74.83
TAR	59.64	64.37	66.33
Gansu	67.24	67.47	70.6
Qinghai	60.57	66.03	72.07
Sichuan	66.33	71.2	72.25
Yunnan	63.49	65.49	67.06
TAR Disparity with the PRC	8.91	7.03	8.5

**Values in parentheses indicate national rank out of 31 provinces, where a value of 1 indicates the largest/highest result and a value of 31 indicates the lowest.*

***Source: Statistical Yearbooks of Gansu, Qinghai, Sichuan, and Yunnan Provinces and the Tibet Autonomous Region (1990, 2000, 2010)*

[44] Canudas-Romo, V., Liu, L., Zimmerman, L., Saifudden, A. & Tsui, A. (2014). Potential Gains in Reproductive-Aged Life Expectancy by Eliminating Maternal Mortality: A Demographic Bonus of Achieving MDG 5. *PLoS ONE*. 9(2): e86694. DOI: 10.1371/journal.pone.0086694; Jayachandran, S. & Llera-Muney, A. (2009). Life Expectancy and Human Capital Investments: Evidence from Maternal Mortality Declines. *The Quarterly Journal of Economics*. 124(1): 349-397. DOI: 10.1162/qjec.2009.124.1.349

[45] Cambois, E., Robine, J.M. & Romieu, I. (1999). *Health expectancy indicators*. Retrieved November 30, 2014 from http://www.who.int/bulletin/archives/ 77(2)181.pdf; World Health Organization. *Life expectancy at birth methodology sheet*. Retrieved from http://www.un.org/esa/sustdev/natlinfo/indicators/methodology_sheets/health/life_expectancy.pdf

In 2009, the average life expectancy of persons in the TAR was 66.33 years - the lowest in the nation and *8.5 years lower* than the national average of 74.83. It was also a full 16.11 years lower than that of Shanghai Municipality. In fact, the disparity between the TAR's average life expectancy and that of the PRC increased by 1.47 years between 2000 and 2010.[46] At 67.06 years, the life expectancy of Yunnan Province was little better than that of the TAR. On average therefore, citizens of the TAR and Yunnan Province lived almost a full decade shorter than Chinese citizens on average. The life expectancies of Gansu, Qinghai, and Sichuan provinces were much closer to national averages.[47]

B. Analysis of Results

The preceding assessments of life expectancy and the six primary indicators of maternal and child health reveal that conditions in Tibet are extremely poor. In the Tibet Autonomous Region, which best represents the experience of Tibetan populations in Tibet broadly (including those in Gansu, Qinghai, Sichuan, and Yunnan Provinces),[48] conditions were especially poor according to each of the six indicators. The tables below condense the TAR's indicator results and show their disparities with national averages.

Table 15. Disparities in Health and Healthcare Between the TAR and the PRC

	I1. MMR	I2. Under Five Child Mortality			I3. Stunting
	MMR	Metric 1. IMR	Metric 2. Systematic Child Healthcare Under 3 Years	Metric 3. Systematic Child Healthcare Under 7 Years	Severe Child Malnourishment
PRC (Avg.)	29	8.69	75.65%	79.65%	1.66%
TAR	232.2	23.1	43.5%	41.2%	3.58%
Disparity Between TAR and PRC	800% higher	266% higher	32% lower	38% lower	216% higher

[46] National Bureau of Statistics of China. *Statistical yearbooks of Gansu Province, Qinghai Province, Sichuan Province, Yunnan Province, and the Tibet Autonomous Region* (1990), (2000), (2010).
[47] *Id*.
[48] Fischer, A. (2011). *The Great Transformations of Tibet and Xinjiang: a comparative analysis of rapid labour transitions in times of rapid growth in two contested minority regions of China*. Paper presented at conference: 'Challenging the Harmonious Society: Tibetans and Uyghurs in Socialist China.' 5. Copenhagen: Nordic Institute of Asian Studies. 20-21 May; Fischer, A. (2002). *Poverty by Design: The Economics of Discrimination*. 11-12. Canada Tibet Committee. Retrieved from http://www.tibet.ca/_media/PDF/PovertybyDesign.pdf

Table 15. Disparities in Health and Healthcare Between the TAR and the PRC

	I5. Antenatal Care		I7. Skilled Attendant at Birth		I8. Postnatal Care
	Metric 1. Systematic Maternal Health	Metric 2. One or More Pre-Birth Hospital Visits	Metric 1. Percentage of Deliveries Made in Hospitals	Metric 2. Newborn Inspection Rate	One or More Post-Birth Hospital Visits
PRC (Avg.)	79.3%	91.6%	94.9%	85.5%	87.8%
TAR	33.3%	66.1%	51.7%	54.5%	54.7%
Disparity Between TAR and PRC	46% lower	26% lower	43% lower	31% lower	33% lower

**Source: China National Population and Family Planning Yearbook (2010)*

Maternal and child health in the TAR, according to Indicators 1, 2, and 3, was extremely poor as late as 2009. With a maternal mortality ratio of at least 232.2 (800% higher than that of the PRC and 628% higher than that of East Asia), an infant mortality rate of at least 23.51 (2.4 infant deaths per 100 births and 266% higher than that of the PRC), and a severe malnutrition rate of at least 3.58% (between three and four severely malnourished children per 100 and 216% higher than that of the PRC) maternal and child health in the TAR was plagued by widespread morbidity and mortality.[49]

As late as 2009, maternal and child healthcare coverage in the TAR was also extremely poor. With rates of systematic care for children under ages 3 and 7 at 43.5% and 41.2% respectively, well under half of the TAR's children received systematic care. With a rate of systematic maternal care at 33.3%, only one third of pregnant women in the TAR received systematic care. With a rate of antenatal care of 66.1%, two thirds of pregnant women received one or more hospital visits before birth. The rate of postnatal hospital visits, at 54.7%, was worse still, leaving almost half of all women who recently gave birth without a postnatal hospital check-up. With a newborn inspection rate of 54.5%, just over half of all newborns received a single check-up.[50] Finally, with a life expectancy of 66 years in 2009, Tibetans were expected to life a full 8.5 years less than average, and as much as 16 years less than highly-developed, coastal regions.[51]

[49]China Population and Family Planning Yearbook (2010), *supra* note 6, at 508, 509, 513.
[50]*Id.*
[51]National Bureau of Statistics of China. (1990, 2000, 2010). *Statistical yearbooks of Gansu Province, Qinghai Province, Sichuan Province, Yunnan Province, and the Tibet Autonomous Region* (1990), (2000), (2010).

These indicators make evident that in the TAR (and Tibetan regions of Gansu, Qinghai, Sichuan, and Yunnan Provinces), pregnant women were dying at immensely disproportionate rates, receiving very low rates of maternal care, and giving birth in absence of a skilled healthcare provider at high rates. During the same time period, newborns and young children were dying at very high relative rates, receiving very low rates of systematic and even single-visit child healthcare, and suffering from high rates of severe malnutrition compared with children in the PRC on average.

A broad evaluation of the indicators reveals that the TAR received the worst results of all 31 provinces of the PRC on nine out of the ten metrics by which health conditions and healthcare were measured. On the tenth metric (severe child malnutrition), the TAR received the third worst score in the PRC. The poor nature of maternal and child health and healthcare in the TAR is not only a matter of national rank however. As is evident in the tables above, immense disparities between health conditions in the TAR and the PRC on average existed in every one of the ten metrics by which health conditions and healthcare were measured.

In summation, indicator-analysis finds that as late as 2009 in Tibetan populations in the PRC, maternal and child mortality was widespread, life expectancy was short, the healthcare system was unable to ensure coverage for essential maternal and child health services, and immense disparities with national averages consistently characterized both health and healthcare conditions.

VI. Origins of a Failing System of Health

Two categories of issues account for the poor state of maternal and child health in Tibet today. The first - the *biomedical* determinants of health, are those biological and medical conditions that are the immediate cause of morbidity and mortality (for example, severe malnutrition, a direct cause of child stunting, and puerperal infection, a direct cause of maternal mortality). Since the 1978 Alma-Ata Declaration on Primary Health Care however, the global medical community has increasingly recognized the importance of a second category of issues that are non-biomedical in nature. This category is the *structural* determinants of health- the social, economic, and healthcare conditions in which individuals live and work that are determined by the distribution of power and resources at the local, national, and global levels. Structural determinants such as healthcare coverage, income level, and level of education have a significant influence on the degree to which biomedical risks translate into morbidity and mortality. As the structural determinants of health account in theory for over 50% of public health, and play the major role in generating health inequity,[1] they are essential to understanding the state of maternal and child health in Tibet. Though the following exploration of the causes of poor maternal and child health opens with an identification of the major biomedical determinants of poor health, this chapter primarily concerns the manner in which structural inequity gives rise to poor health outcomes in Tibet.

A. Biomedical Determinants of Maternal and Infant Mortality

In the Tibet Autonomous Region (TAR) and Gansu, Qinghai, Sichuan, and Yunnan Provinces, obstetric haemorrhage (PPH) was the leading cause of maternal mortality by a wide margin as late as 2007, accounting for roughly 65% of deaths. Other leading causes of mortality included pregnancy-induced hypertension (PIH) (19%), puerperal infection (13%), and amniotic fluid embolism (4%).[2] Though systematic data concerning the leading causes of death in Tibetan populations specifically was available at the time of the writing of this report, a large survey of three Lhasa hospitals and targeted surveys of maternal mortality in rural Tibetan communities also found that PPH and PIH/pre-eclampsia were leading causes of death.[3] Obstructed labour was reported to be an additional significant cause of death, especially in rural contexts.[4]

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[1]Commission on Social Determinants of Health (CSDH). (2008). *Closing the gap in a generation: health equity through action on the social determinants of health*. 1, 110. Final Report of the CSDH. World Health Organization. Retrieved from http://whqlibdoc.who.int/publications/ 2008/9789241563703_eng.pdf?ua=1; O'Hara, P. (2005). Creating social and health equity: adopting an Alberta social determinants of health framework. Discussion Paper. 2. Edmonton Social Planning Council. Retrieved from http://www.who.int/social_determinants/ resources/paper_ca.pdf

[2]Liang, J., Li, X., Dai, L., Zeng, W., Li, Q., Li, M., Zhou, R. et al. (2012).The changes in maternal mortality in 1000 counties in mid-western China by a government-initiated intervention.*PLoS ONE*. 7(5). e37458. 6. DOI:10.1371/journal.pone.0037458

[3] Adams, V., Chertow, J., Craig, S., Miller, S. & Varner, M. (2005). Having a "safe delivery": Conflicting views from Tibet. *Health Care for Women International*. 26: 829-831. DOI: 10.1080/07399330500230920; Lumpkin, T.W. (2005). *Maternal and child health care in Gargon: Findings from surveys, focus groups, and clinical data*. Gar Tibet Health Project. 5. Retrieved from

According to a broad 2008 study of infant mortality in the PRC, the greatest proportion of under-five child mortality occurred during the neonatal period (0-1 months), and accounted for over 50% of deaths. Deaths occurring during early childhood (1 - 4 years) and infancy (1 month - 1 year) accounted for over 30% and over 10% of deaths, respectively. In the TAR specifically, pneumonia and birth asphyxia were the single greatest causes of under-five death. Preterm birth complications, accidents, and congenital abnormalities also accounted for high percentages of death. To a lesser degree, sudden infant death syndrome, diarrhoea, and neonatal sepsis were also causes of mortality. "Other causes," including neonatal tetanus, intracranial haemorrhage, scleroderma, accidental asphyxia, and meningitis together accounted for a high proportion of deaths. In Gansu, Qinghai, Sichuan, and Yunnan Provinces, pneumonia, birth asphyxia, "other causes," and preterm birth complications were the leading causes of under-five mortality.[5] Although little systematic data concerning infant death in Tibetan populations specifically existed at the time of the writing of this report, targeted studies of child mortality in rural Tibetan populations also found that pneumonia and birth asphyxia were leading causes of death. Significantly, diarrhoea and especially neonatal sepsis were also found to be widespread causes of child mortality in rural areas.[6]

In the Tibetan regions of the PRC therefore, conditions and complications occurring during pregnancy, birth, and the neonatal period were the cause not only of maternal mortality, but of a majority of child mortality as well.[7]

B. Supply-Side Determinants of Poor Health

In Tibet, the major structural determinants of poor health are deeply rooted in both sides of the patient/provider and demand/supply divides. Supply-side determinants of health concern the major components of the healthcare system, including physical infrastructure, personnel, health system financing, and data collection and health monitoring.

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http://www.tibethealthproject.org/docs/GTHP%20Needs%20Assessment %20Report.pdf; Miller, S., Tudor, C., Nyima, Thorsten, V.R., Sonam, Droyung, Craig, S. et al. (2007). Maternal and neonatal outcomes of hospital vaginal deliveries in Tibet. *International Journal of Gynecology and Obstetrics*. 98(3): 217-221. doi: 10.1016/j.ijgo.2007.03.033

[4] Adams, Chertow, Craig, Miller & Varner, *supra* note 2; Lumpkin, *supra* note 3, at 5.

[5] Rudan, I., Chan, K.Y., Zhang, J.S.F, Theodoratou, E., Feng, X.L., Salomon, J., Lawn, J.E. et al. (2010). Causes of death in children younger than 5 years in China. On behalf of WHO/UNICEF's Child Health Epidemiology Reference Group (CHREG). *The Lancet*. 375: 1086-1088.

[6] Adams, Chertow, Craig, Miller & Varner, *supra* note 3, at 824; Conversation with a Trainer of Community Health Workers based in Yushu Tibetan Autonomous Prefecture, Qinghai Province, December 12, 2014; Dickerson, T., Simonsen, E. & Samen, A. (2010). Pregnancy and village outreach Tibet: a descriptive report of a community and home-based maternal-newborn outreach program in rural Tibet. *The Journal of Perinatal & Neonatal Nursing*. 24(2): 114.

[7] Rudan, I., Chan, K.Y., Zhang, J.S.F, Theodoratou, E., Feng, X.L., Salomon, J., Lawn, J.E. et al. (2010). Causes of death in children younger than 5 years in China. On behalf of WHO/UNICEF's Child Health Epidemiology Reference Group (CHREG). *The Lancet*. 375: 1086-1088.

Physical Infrastructure

A superficial assessment of physical healthcare infrastructure in Tibetan regions of the PRC indicates that health facility coverage in both rural and urban areaswas quite high as late as 2012. Rural areas of the TAR and Gansu, Qinghai, and Sichuan Provinces had relatively high densities of village clinics and township health centres (THCs), and above average densities of outpatient departments. With the exception of Gansu Province, hospital coverage in urban areas was also quite good, especially in Qinghai and the TAR.[8]

These measures of facility coverage reflect only the number of healthcare facilities in relation to the total population, and neglect geo-spatial considerations.[9]When the vast geographical areas and sparse inhabitation of the five Tibetan regions are taken into account, it is revealed that facility coverage in reality is extremely poor. According to a 2007 study of health facility access in rural areas of the PRC, the accessibility of healthcare in Gansu, Sichuan, and Yunnan Provinces was 27th, 22nd, and 26th lowest in the nation, respectively. Accessibility of healthcare in the TAR and Qinghai Province was the lowest and second lowest in the PRC, and100% and 99% lower than the average level of accessibility in the PRC. The same study found that the service area per primary healthcare worker at the village and township levels in Gansu, Qinghai, Sichuan, and Yunnan Provinces was 5th largest (9.89km^2), 2nd largest(59.94km^2), 11th largest(2.85km^2), and 7th largest (5.56km2) in the nation, respectively. The service area of a single care provider in the TAR was *230.21km^2* (143 mi^2). This service area was the largest in the nation, 3.8 times larger than the region with the second largest per capita service area (Qinghai), and 17.3 times larger than the national average.[10]

Because the 2007 study's measures of accessibility include village clinics and village doctors, which do not offer maternal and child care services, the accessibility of maternal and childcare specifically is much lower than the results above suggest. Furthermore, because as few as 15% of THCs in Tibetan regions actually offer the emergency maternal and neonatal care services they are meant to, the inclusion of THCs in the above measurements of accessibility also inflate the degree to which appropriate care is accessible.[11] For many Tibetan women and children therefore, the nearest

[8]National Bureau of Statistics of China. (2013). *National Statistical Yearbook* [*hereinafter* 2013 China National Statistical Yearbook] Chapters 21-1, 21-4.

[9] Han, Y., Wei, J., Song, X., Barber, S.J., Wen, C. & Zheng, X. (2012). Accessibility of primary health care workforce in rural China.*Asia-Pacific Journal of Public Health*. 24: 835. DOI: 10.1177/1010539511403801

[10]*Id*., at 837-841.

[11] Liu, C., Zhang, L., Yi, H., Luo, R., Shi, Y., Zhou, H., Medina, A. et al. (2013). Maternal health services in China's western rural areas: uptakes and correlates. Stanford University Rural Education Action Project (REAP) Working Paper 256. Retrieved from http://fsi.stanford.edu/sites/default/files/MH_in_Rural_China_-_Full_12FEB2013_-_clean.pdf;China Ministry of Health, WHO, UNICEF, UNFPA (2006). Joint review of maternal and child survival strategies in China. Report. 29. Beijing, China

appropriate maternal and child healthcare is at county hospitals – often long hours or days of travel away.[12]

A second major infrastructural obstacle to the achievement of good health outcomes is the shortage of medical supplies in THCs. Shortages of supplies necessary for emergency obstetric care appear to be particularly severe: research from Anhui Province found for example that 50% of the THCs studied lacked scales to weigh mothers, 70% lacked manual suction pumps for infant airway clearance, and 40% lacked access to running water.[13] Shortages in blood supply and equipment for Caesarean section delivery have also been widely reported.[14]In part as a result of such shortages, many THCs in Tibetan areas lacked the capacity to provide basic obstetric services.[15]

Personnel

Levels of healthcare personnel vary throughout the five Tibetan regions of the PRC. In Qinghai and Sichuan Provinces in 2012,the densities of technical medical personnel (including licensed doctors, doctor's assistants, registered nurses, and pharmacists) were near national averages, and both regions had high densities of village doctors. Gansu Province had much lower densities of technical medical personnel, ranging from 22nd to 27th lowest in the PRC, though it too had high densities of village doctors. The Yunnan Province also had a high density of village doctors, the densities of technical medical personnel were extremely low, ranging from 28th to 30th lowest in the PRC. In the TAR, the densities of technical medical personnel were the lowest in the nation by wide margins: densities of licensed doctors, assistant doctors, registered nurses, and pharmacists were 39%, 31%, 67%, and 47% lower than their respective national averages. The TAR did however have the highest number of village doctors of any region by a wide margin.

The personnel strengths of the five Tibetan regions lie in very high densities of village doctors. However, because village doctors only provide primary care, they are unable to prevent and intervene in the health crises that cause the majority of maternal and infant deaths. In Gansu and Yunnan Provinces and the TAR, densities of the technical medical personnel capable of providing obstetric and neonatal care services are extremely low, and have been found to be the 4th, 3rd, and 2nd least accessible in the entire

[12] Wellhoner, M. et al. (2011). Maternal and child health in Yushu, Qinghai Province, China.*International Journal for Equity in Health*. 10: 42. 4. Retrieved from http://www.equityhealthj.com/content/10/1/42
[13] Wu, Z. (2011). *Perinatal Health and Maternal Care in Rural China*. (Unpublished doctoral dissertation). 47-48. University of Helsinki/National Institute for Health and Welfare, Finland.
[14] Gao, Y., Barclay, L. (201). Availability and quality of emergency obstetric care in Shanxi Province, China. *International Journal of Gynecology and Obstetrics*.11: 181-185. DOI:10.1016/j. ijgo.2010.05.001; Harris, A., Zhou, Y., Liao, H., Barclay, L., Zeng, W. &Gao, Y. (2010). Challenges to maternal health care utilization among ethnic women in a resource-poor region of Sichuan Province, China.*Health Policy Plan*. 25: 311-318. DOI:10.1093/heapol/czp062
[15] Tan, L.F., Huang, C.L., Yang, R.R. et al. (2012). Study on the accessibility of maternal health services for Tibetan women in agricultural and pastoral areas in Yushu Autonomous Prefecture. Population Research Institute. Beijing: Beijing University. 7.

PRC.[16] Widespread shortages of technical personnel in rural THCs in particular have been commonly reported,[17] and a "severe maldistribution" of doctors and nurses between urban and rural areas has been found in the PRC more broadly.[18]Considering that the availability of technical medical personnel is strongly positively correlated with maternal health outcomes,[19] it is clear that inadequate levels of maternal and child healthcare providers are a major issue for Tibetan populations - especially those inhabiting rural areas. Finally, the accessibility of providers in rural areas is further reduced by the long, unscheduled absences from work that occur as a lack of adequate supervision.[20]

Another cause of poor health outcomes that is related to healthcare personnel concerns the low level of training of many care providers. A joint United Nations-PRC report found that on average, obstetricians had only 3 years of basic training, 1.5 years of specialized training, and a few years of work experience.[21]The lack of qualified providers of maternal and childcare is especially severe in rural areas. As late as 2005 for example, it was found that the proportion of doctors with a college education or higher in rural areas of the PRC was over three times smaller than that of the proportion in urban areas, and under 1% of rural nurses had a college degree.[22] Though government has made efforts to require more rigorous certification for rural healthcare providers,[23] the requirements for certification were lower in Western, rural, and remote regions. As a result, the knowledge, skill, experience of providers, and the quality of the services they render, have remained much lower in Tibetan-populated regions of the PRC.[24] The consequences of healthcare provided by under-qualified personnel are many, and include medical practice that does not comply with best-practice guidelines,[25] the underutilization of essential medical equipment as the result of ignorance of its use,[26]lower rates of service utilization,[27] and poorer health outcomes.

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[16] Han, Wei, Song, Barber, Wen & Zheng, *supra* note 9, at 839.
[17]China Ministry of Health, WHO, UNICEF, UNFPA, *supra* note 11, at 38; Liang, J., Dai, L., Zhu, J., Li, X., Zeng, W., Wang, H., Li, Q. et al. (2011). Preventable maternal mortality: geographic/rural-urban differences and associated factors from the population-based maternal mortality surveillance system in China. *BMC Public Health*.11: 6. Retrieved from http://www.biomedcentral.com/1471-2458/11/243; Lu, J., Shen, J., Chen, G., Moseley, C.B., Sun, M., Gao, F., Wang, Y. et al. (2011) Regional disparities in prenatal care services in rural China. *Asia-Pacific Journal of Public Health*. 23(5): 682-698. doi:10.1177/1010539511418356
[18] Anand, S., Fan, V.Y., Zhang, J., Zhang, L., Ke, Y., Dong, Z & Chen, L.C. (2008). China's human resources for health: quantity, quality, and distribution. The Lancet. Vol. 372: 1779-1780. DOI:10.1016/S0140- 6736(08)61363-X
[19] Fang, P., Dong, S., Xiao, J., Liu, C., Feng, X. & Wang, Y. (2010). Regional inequality in health and its determinants: Evidence from China. *Health Policy*. 94:20-21.
[20] Conversation with a Trainer of Community Health Workers, *supra* note 6.
[21]China Ministry of Health, WHO, UNICEF, UNFPA, *supra* note 11, at 79.
[22] Anand, Fan, Zhang, Zhang, Ke, Dong & Chen, *supra* note 18, at 1776.
[23] Recent initiatives include the 2004 "Village Medical Practitioners Regulations."
[24] Han, Wei, Song, Barber, Wen & Zheng, *supra* note 9, at 843.
[25] Eggleston, K., Ling, Li., Qingyue, M., Lindelow, M. & Wagstaff, A. (2008). Health service delivery in China: A literature review. *Health Economics*. 17:149-165. 152. DOI: 10.1002/hec.1306
[26] Tan, Huang, Yang et al., *supra* note 15, at 6.
[27] Harris, A., Zhou, Y., Liao, H., Barclay, L., Zeng, W. & Gao, Y. (2010). Challenges to maternal health care utilization among ethnic minority women in a resource-poor region of Sichuan Province, China.*Health Policy and Planning*. 25: 311-318. DOI:10.1093/heapol/czp062

The shortage of qualified maternal and child care providers in rural areas is in large part due to significant wage gaps between urban and rural positions, medical school graduates' preference for work in high-profile urban medical organizations, and decreased opportunities for career advancement in rural areas. Though government has attempted to counteract these disincentives via wage increases at rural THCs, rural service requirements for qualified providers, and the recruiting of college graduates into rural hospitals, the retention of well-educated and qualified providers remains a major obstacle to quality healthcare.[28]

Finally, a number of underreported personnel-related issues negatively affect health outcomes, including negative[29] and sometimes discriminatory staff attitudes towards Tibetan seekers of care,[30] and providers' "weak will" to aggressively address the poor state of maternal and child health in rural and remote areas.[31]

Health System Finance

Data concerning government expenditure on maternal and child health in particular was unavailable at the time of the writing of this report. However, low regional government expenditure on general healthcare in the TAR indicates that spending on maternal and child health is also low. In the TAR in 2012, regional government expenditure on healthcare made up 3.99% of total expenditure. This proportion was the lowest in the nation by a significant margin, and was less than two-thirds of the national average for regional government healthcare expenditure.[32]Though regional government expenditure in Qinghai Province was the fifth lowest in the nation (5.19%), it was much closer to the national average, as were those of the governments of Gansu (7.20%), Sichuan (7.28%), and Yunnan Provinces (7.47%).[33]

A comparison of government expenditure on healthcare in 2008 and 2012 yields a broader picture of the impact of government spending on health outcomes in Tibet. In 2012, healthcare expenditure as a percentage of total expenditure was higher than in 2008 in Gansu Province (+1.18%), Sichuan Province (+2.91%)and Yunnan Province (+.36%). In the TAR and Qinghai Province, regional government spending on healthcare as a function of total expenditure was lower than in 2008by .31%and1.59%, respectively.[34]

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[28] Han, Wei, Song, Barber, Wen & Zheng, *supra* note 9, at 843-844.
[29] Liang, Dai, Zhu, Li, Zeng, Wang, Li, et al., *supra* note 17, at 6.
[30] Tan, Huang, Yang, et al., *supra* note 15, at 6.
[31] Participants in a TCHRD survey concerning maternal and child healthcare in Tibet reported poor treatment by Chinese providers employed in government care facilities as the result of their Tibetan ethnicity.
[32] 2013 China National Statistical Yearbook, *supra* note 8, at Chapter 9-6.
[33] *Id*.
[34] National Bureau of Statistics of China. (2009, 2010, 2011, 2012, 2013). *Statistical yearbooks of Gansu Province, Qinghai Province, Sichuan Province, Yunnan Province, and the Tibet Autonomous Region* (2009), (2010), (2011), (2012), (2013).

At the national level, the growth in funding specific to maternal and child healthcare has lagged far behind the growth of the general health sector – a consequence of insufficient government funding and the slow rate of increase in financial support for maternal and child health.[35] Finally, disparities in health system funding also persist in the intraregional context, mainly between urban and rural areas. Research has found that 80% of all healthcare resources in the PRC were allocated to urban areas, especially large metropolises and medium-sized cities with highly developed healthcare systems.[36]

Data Collection and Health Monitoring

The amount and availability of data concerning maternal and infant mortality in the TAR appears to be extremely low. According to a 2014 study, the TAR was one of only five regions in the PRC found to completely lack data reported from the Provincial Maternal Mortality Surveillance System (PMMSS) – the primary means by which mortality is measured at the local level and by which scientific evidence supporting strategic solutions is gathered. Furthermore, whereas the majority of coastal regions of the PRC reported full time series of data from the PMMSS from the late 1990s through the 2000s, western provinces, including Gansu, Qinghai, and Yunnan Provinces, reported just three to five years of intermittent to continuous PMMSS data.[37]

Wide disparities in basic health data, such as registrations of births and deaths, also existed intraregionally between urban and rural areas as late as 2008.[38] These results are somewhat unsurprising considering the underdeveloped nature of Tibetan regions' medical-administrative infrastructure. In 2012, the TAR, Gansu, Qinghai, and Yunnan Provinces had the 1st, 5th, 6th, and 3rd lowest densities of medical administrative personnel in the PRC by margins of between 26% and 37% below the national average.[39]

Such failures in data collection and health monitoring perpetuate the ignorance of poor maternal and child health conditions and their causes that preclude effective intervention in the Tibetan regions. The apparent neglect of health monitoring also contravenes explicit UN recommendations that the PRC extend and intensify its data collection and analysis particularly with regard to "marginalized groups" and "ethnic minorities."[40]

Conclusions

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[35]China Ministry of Health, WHO, UNICEF, UNFPA, *supra* note 11, at 25.
[36] Huang, A., Xi, J., Luo, R., Mu, T., Xiang, M. et al. (2010). The situation of human resources in the county level maternal and children care institutes. *Chinese Journal of Women and Childrens Health*. 11: 130-133; China Ministry of Health, WHO, UNICEF, UNFPA, *supra* note 11, at 6.
[37] Gan, X.L., Hao, C.L., Dong, X.J., Alexander, S., Dramaix, M.W., Hu, L.N. & Zhang, W.H. (2014). Provincial maternal mortality surveillance systems in China.*BioMed Research International*. Volume 2014. http://dx.doi.org/10.1155/2014/187896
[38] Rudan, Chan, Zhang, Theodoratou, Feng, Salomon, Lawn et al., *supra* note 5, at 1087.
[39]2013 China National Statistical Yearbook.*supra* note 8, at Chapter 21-2.
[40]China Ministry of Health, WHO, UNICEF, UNFPA, *supra* note 11, at 38-39, 47.

Poor health outcomes in Tibetan regions that originate from the supply-side setting are the result of three pervasive issues: the limited accessibility of healthcare in rural and remote areas, the limited capacity of maternal and child healthcare, and the low quality of health services.

Limited accessibility is caused primarily by the low geographic density of health facilities, low numbers of technical medical personnel, and the immense geographic service areas of care providers. Inaccessibility of healthcare is arguably the issue of greatest consequence for the rural and remote areas where a large proportion of the Tibetan population lives and where the maternal and child health risks are highest. One major consequence of inaccessible care is that Tibetan women and children do not receive preventive, emergency, and remedial care and are therefore much more vulnerable to morbidity and mortality. A second important consequence is that in the absence skilled healthcare, children and pregnant women have no choice but to self-treat in the home context as necessary, often employing unsafe medical practices that further compound their risk and often lead to poor health outcomes.

The second critical supply-side issue is the limited capacity of healthcare that is widely characteristic of healthcare facilities and medical personnel in Tibetan-populated rural regions. Low-capacity healthcare is the result of a number factors, beginning with vastly insufficient and heavily urban-biased government financing of care facilities, and extending to the lack of essential medical supplies, emergency obstetric equipment, and qualified providers of maternal and child care. While low-capacity healthcare impacts a greater proportion of urban communities (which generally have greater access to care), it is also problematic for those rural-living women and children who have access to healthcarecare, but only to limited or inappropriate options. The consequences of limited capacity are severe: for pregnant women with developing or manifesting birth complications especially, the availability of emergency obstetric equipment, doctors, and services at healthcare institutions often makes the difference between survival and death.

The third major supply-side cause of poor health outcomes is the poor quality of rural healthcare services. Low quality is the result of many factors, including the low levels of education and medical training characteristic of providers at many rural THCs and county hospitals, low levels of provider supervision in rural regions, provider non-compliance with medical best practice, providers' discriminatory attitudes towards ethnic minorities, and rural providers' lack of will to aggressively address the causes of poor health. Poor service quality further compounds the risks created by inaccessible and low capacity care.

C. Demand-Side Determinants of Poor Health

Demand-side determinants of poor health originate in patients' living and working conditions. In Tibet, the major determinants of poor health are geographic location, socioeconomic status, level of education, minority ethnicity and associated cultural

beliefs, and gender. It is important to note that patients are not responsible for remedying health issues that stem from demand-side determinants. To the contrary - the government of the People's Republic of China has expressly assumed responsibility for improving health outcomes linked with each of the five demand-side determinants explored in this section.[41,42,43,44,45,46]

Geographic Location

Geographic location, expressed in terms of urban, rural, and remote place of residence, is widely recognized as one of the most influential demand-side structural determinants of maternal and child health.[47] Not only are a high proportion of urban residents strongly positively correlated with better health outcomes, but the regional ratio of urban to rural residents is also the second strongest determinant of health inequity in the PRC by a wide margin.[48] For Tibetan regions and the TAR in particular, which are inhabited by some of the most dispersed, remote-living, and inaccessible populations in the PRC, rural and remote residence is one of the leading causes of poor health.[49]

Though data concerning the influence of geographic location on Tibetan populations specifically is very limited, health inequities between urban and rural environments at the national level give glimpses of the disparities endured by Tibetans. In 2008 the disparity between rural and urban MMRs at the national level was 19%; in 2009 in the TAR however, rural MMR was 57% higher than urban MMR.[50] In the same year, the MMR of "Western" regions of the PRC (the most rural group, of which the Tibetan regions make up five out of eight regions)[51] was 33% and 62% higher than that

[41]Measures for the Implementation of the Law of the People's Republic of China on Maternal and Infant Care. (Promulgated by Decree No.308 of the State Council of the People's Republic of China on June 20, 2001, effective June 20, 2001). Chapter I: Art. 1, 2.
[42]*Id*., at Art. 6.
[43]Education Law of the People's Republic of China (Promulgated by Order No.45 of the President of the People's Republic of China on March 18, 1995, effective as of September 1, 1995). 1995 Third Session of the Eighth Nat'l People's Cong. Chapter I: Art. 1, 8, 9, 10.
[44] Measures for the Implementation of the Law of the People's Republic of China on Maternal and Infant Care, *supra* note 41, at Chapter I: Art. 3(1), Chapter III: Art. 18(7).
[45]*Id*., at Chapter I: Art. 6.
[46]Information Office of the State Council of the People's Republic of China (2005).White Paper on Gender Equity and Women's Development in China. Chapter XI: Women and Health. Beijing.
[47] U.S. Department of Health and Human Services (2009). *Disparities*. Healthy People 2020. Retrieved from http://www.healthypeople.gov/2020/about/foundation-health-measures/Disparities; Commission on Social Determinants of Health, *supra* note 1, at 60-71.
[48] Fang, Dong, Xiao, Liu, Feng, & Wang, *supra*note 19, at 14-25.
[49]2013 China National Statistical Yearbook.Chapters 3-7, 16-4; Benewick, R. & Donald, S. (2009).*The state of China atlas*. Berkeley: University of California Press.
[50]China National Population and Family Planning Commission. (2010). *China population and family planning yearbook*.Maternal Health Care by Region (continued), 509.
[51] In some studies, Sichuan Province is included in the "Inland" or "Central" category.

of the "Central" and "Eastern," respectively.[52]Women in urban areas were four times more likely to give birth in a hospital than women living in rural and remote areas.[53]

Geographic disparities in outcomes persist in the arena of child health. The newborn mortality rate, infant mortality rate, and under-five mortality rate of rural areas was 59%, 64%, and 64% higher than their respective rates for urban areas in 2010.[54] The hospital delivery rates of remote, rural and urban areas were 33%, 76%, and 95% respectively in 2005.[55] Neonatal mortality occurring in hospitals and at home in remote rural areas during the 2000s were 74% and 60% higher than their respective rates for urban areas.[56] In 2006, the prevalence of underweight and stunted children was both 75% higher than their urban counterparts.[57]

One consequence of Tibetan populations' largely rural and remote inhabitancy is that physical and temporal distances to healthcare facilities are large for many families. The problem of distance is compounded by the relatively undeveloped and often degraded nature of these regions' transportation systems.[58] Even in rural areas where roadways do exist, seasonal climate conditions such as heavy ice and deep mud can render them impassable for much of the year.[59]The low rate of vehicle ownership in the five Tibetan regions also complicates transportation to health facilities, and means that healthcare seekers often have to wait hours or even days just to secure a means of transportation.[60]Inaccessibility is of the utmost consequence in situations where emergency obstetric or neonatal care is required.[61,62] In remote areas of the PRC from 2006-2008, "delayed hospital visits" and "transportation issues" were reported to be the

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[52] United Nations Children's Fund (UNICEF) (2013). *China*. Maternal and Newborn Health Country Profiles. 4. Retrieved from http://www.unicef.org/eapro/MNH_China.pdf

[53] Feng, X.L, Xu, L., Guo, Y. & Ronsmans, C. (2011). Socioeconomic inequalities in hospital births in China between 1998 and 2008.*Bull World Health Organization*. 89: 433-434, 436. DOI:10.2471/BLT.10.085274

[54] UNICEF, *supra*note 52,at 5.

[55] Fuqiang Cui, P., Hadler, S. & Xiaofeng, L. (2007). Analysis on new born hepatitis B immunization coverage and pregnant women hospital delivery rate in different regions. *Chinese Journal of Vaccines and Immunization*. 13: 1-3.

[56] Feng, X.L. et al. (2011). China's facility-based birth strategy and neonatal mortality: a population-based epidemiological study. *The Lancet*. 378: 1493-1500. DOI:10.1016/S0140- 6736(11)61096-9

[57] United Nations Children's Fund (2013). *Progress toward the millennium development goals and other measures of the well-being of women and children*. 3. Retrieved from http://www.unicef.org/eapro/MDG_Profile_China_2013.pdf

[58] 2013 China National Statistical Yearbook, *supra* note 8, at Chapter 16-4.

[59] Lumpkin, *supra* note 3, at 9.

[60] Data from the 2013 National Statistical Yearbook of the PRC (16-26) reveals that the rates of per capita private vehicle ownership of Gansu Province and the Tibet Autonomous Region are roughly half the national average (the lowest and third lowest rates in the nation, respectively). The per capita ownership rates of Qinghai, Sichuan, and Yunnan Provinces are much closer to the national average.

[61] Li, J., Chen, L.L., Chen, SZ., Cen, M.Y., Zhao, N.Q. & Qian, X. (2009). Study on the status of institutional delivery and its determinants in rural Guangxi autonomous region. *Chinese Journal of Epidemiology*. 29(3): 224-229.

[62] Community health workers interviewed by TCHRD also noted that physical access to healthcare facilities is one of the greatest obstacles to good maternal and child health outcomes.

second and fifth greatest reasons for the lack of child healthcare that resulted in death. Together, these two obstacles accounted for over one third of infant death.[63]

Socioeconomic Status

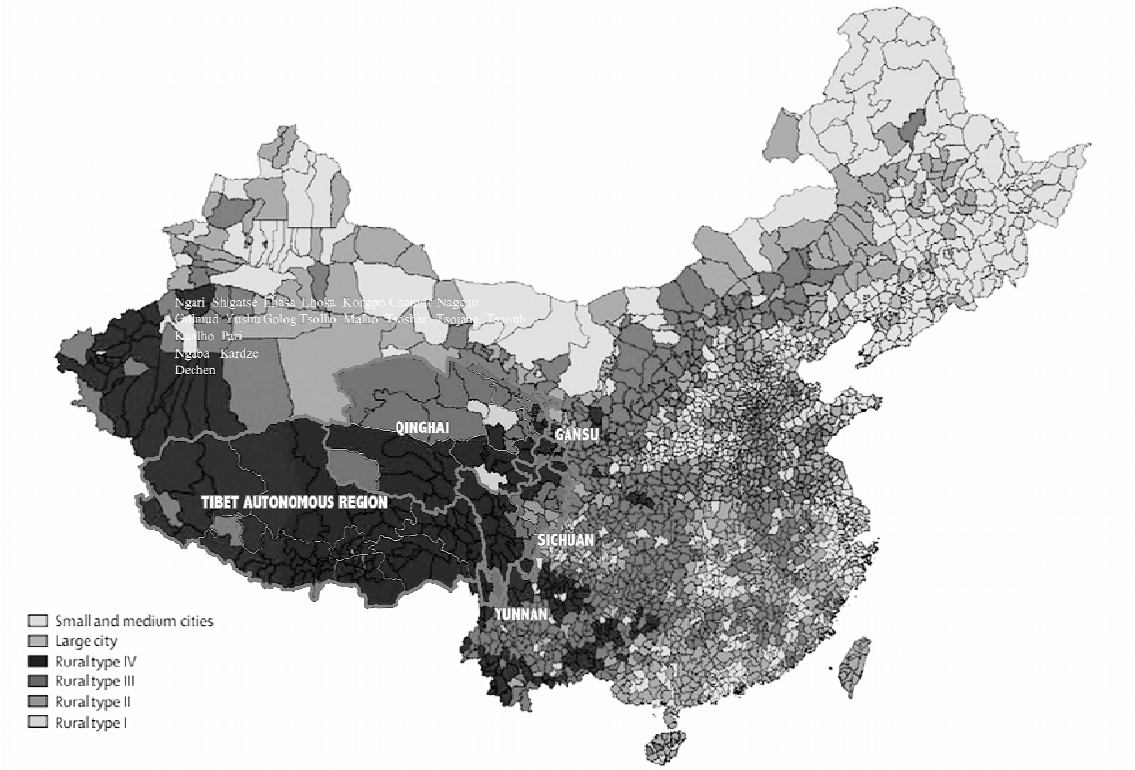
Socioeconomic status is the single most influential demand-side structural determinant of poor health and health inequity.[64] According to a 2010 study of health inequity in the PRC, per capita income alone was the strongest determinant by a margin of 41%.[65] The correlation between socioeconomic status and health is characterized by the "social gradient of health" – on average, the lower a person's, family's, or region's socioeconomic position, the worse the state of health.[66]

Evidence of this correlation within the Chinese context is striking: maternal mortality was 53% higher in rural, underdeveloped areas than in urban areas in 2005. In the "Remote" regions of the PRC (rural and less economically-developed, including every Tibetan region except Sichuan Province), MMR was 42% and 76% higher than in inland and coastal regions, respectively.[67]Children living in the most rural and underdeveloped administrative regions were three to six times more likely to die before age five than in more developed urban regions.[68]

By measure of per capita income, the quintessential measure of socioeconomic status, the TAR and Gansu, Qinghai, and Yunnan Provinces are some of the poorest in the nation (*see* Figure 4).[69] Additional indicators of socioeconomic status measured in Chapter IV indicate that Tibetan populations within these regions bear a greatly disproportionate burden of income inequality even within these poor and underdeveloped regions.[70]

[63] Wang, Y., Zhu, J., He, C., Li, X., Miao, L. & Liang, J. (2012). Geographical disparities of infant mortality in rural China.*Archives of Disease in Childhood*. Fetal and Neonatal Ed. 97:F285–F290. DOI:10.1136/archdischild-2011-300412
[64] Yuan, B., Xu, Q. & Thomsen, S. (2013). Disadvantaged populations in maternal health in China who and why? *Global Health Action*. 6: 19542. http://dx.doi.org/10.3402/gha.v6i0.19542
[65] Fang, Dong, Xiao, Liu, Feng, & Wang, *supra* note 19, at 20.
[66] Commission on Social Determinants of Health, *supra* note 1, at 31-34.
[67] Liang, J., Zhu, J., Dai, L. Li, M &, Wang, Y. (2010). Maternal mortality in China 1996-2005.*International Journal of Gynecology and Obstetrics*. 110: 94-95. DOI:10.1016/j.ijgo.2010.03.013
[68] Rudan, Chan, Zhang, Theodoratou, Feng, Salomon, Lawn et al., *supra*note 5, at 1086.
[69]Bureau of Statistics of the People's Republic of China. (2013). *2013 China national statistical yearbook*.Chapters 11-3, 11-14, 11-21, 21-27; See Chapter IV.
[70]*Id*.

Figure 3. Economic Development of Administrative Regions of the PRC[71]



**Darker shading indicates higher proportions of rural residents and lower levels of economic development, from Rural Type IV regions, to Rural Types III, II, I, small and medium cities, and large cities.*

The most direct socioeconomic challenge to maternal and child health is the result of families' financial inability to ensure healthy living conditions. As the social gradient in health suggests, poorer families with lower consumptive potential are much less able to afford essential items such as nutritious food in sufficient quantity, clean drinking water, vitamin supplements for pregnant women and children, child vaccinations, basic medicines and drugs, adequate housing, and warm clothing. Such families are also have less control over their physical environment, including factors such as adequate sanitation and clean water supply.[72] For many Tibetan communities, such considerations are of the utmost concern. The degree and immediate impact of such deprivation is represented best by a 2005 study conducted in Qinghai Province, which found that pregnant Tibetan women regularly fainted from a lack of food.[73]

The greatest socioeconomic challenges to maternal and child health however are the result of limited financial access to healthcare. The positive correlation between socioeconomic status and health services utilization is strong, and influences the entire continuum of maternal care. Women from low income groups seek out significantly less

[71] Rudan, Chan, Zhang, Theodoratou, Feng, Salomon, Lawn, et al., *supra* note 5, at 1084.
[72] World Health Organization (2010). A conceptual framework for action on the social determinants of health. Social Determiants of Health Discussion Paper 2. 36-38, 43-44. WHO: Geneva.
[73] Lumpkin, *supra* note 3, at 12.

antenatal care,[74] obstetric care for birth complications,[75]intrapartum care in hospitals,[76] and care for discomfort after birth[77] than do women from higher income groups. Among impoverished families, healthcare is foregone such that limited financial resources may be spent on more immediate needs.[78] Though the greatest financial barriers to care utilization stem from supply-side healthcare conditions, a number of barriers are inherent to demand-side conditions. For example, the cost of transportation to an appropriate care facility alone is often prohibitive for impoverished, remote-living families.[79]

Level of Education

The role of the education in achieving good maternal and child health cannot be overstated. Education is strongly positively correlated with the safety of home-based maternal and child healthcare practices, and is also an extremely influential factor in health services utilization for maternal and child health issues. According to data from the PRC's Maternal Mortality Surveillance System in 2006, education was the strongest structural determinant of maternal and child health in rural and remote areas.[80]

Rates of education among Tibetan populations are some of the worst in the PRC. In 2010, 41% of Tibetan men and 59% of Tibetan women had never attended school.[81] In 2013, Gansu, Qinghai, and Yunnan Provinces had the seventh, second, and fourth highest adult illiteracy rates in the PRC, at 7.4%, 13.5%, and 8.5% respectively. In the TAR, the illiteracy rate was 41% - the highest in the PRC, more than three times higher than that of the region with the second highest illiteracy rate (Qinghai), and 89% higher than the national average (4.6%).[82] In rural and remote areas, where educational facilities and qualified instructors are sparse, conditions are worse still.[83]

Education plays a critical role in shaping women's perception of the body, illness, and appropriate preventative and remedial care.[84] This influence is of greatest

[74] Long, Q., Zhang, T., Xu, L., Tang, S. & Hemminki, E. (2010). Utilisation of maternal health care in western rural China under a new rural health insurance system (New Co-operative Medical System).*Tropical Medicine and International Health*. 15(10). 1213, 1215. DOI:10.1111/j.1365-3156.2010.02602.x
[75] Tan, Huang, Yang et al., *supra* note 15, at 4-5.
[76] Feng, Xu, Guo & Ronsmans, *supra* note 53, at 432-441.
[77] Tan, Huang, Yang, et al., *supra* note 15, at 4-5.
[78] Gao, J., Qian, J., Tang, S., Eriksson, B. & Blas, E. (2002). Health equity in transition from planned to market economy in China. *Health Policy and Planning*. 17(Supplement 1): 20-29.
[79]Lumpkin, *supra* note 3, at 21; Ahmed, S., Creanga, A.A., Gillespie, D.G., Tsui, A.O. (2010). Economic status, education and empowerment: implications for maternal health service utilization in developing countries. *Plos One*. 5: 1-6.
[80] Liang, Dai, Zhu, Li, Zeng, Wang, Li, et al., *supra*note 17, at 6-7.
[81]National Bureau of Statistics of the People's Republic of China (2010) *National Population Census*. Department of Population and Employment Statistics.
[82] Statista. (2014). *Illiteracy rate in China in 2012 by region*. Retrieved from http://www.statista.com/statistics/278568/ illiteracy-rate-in-China-by-province/
[83] Tibetan Centre for Human Rights and Democracy (2014). *Special Report on the Right to Education in Tibet*. Dharamsala, India. 39-40, 56-61.
[84] Conversation with a Trainer of Community Health Workers, *supra* note 6.

consequence for health services utilization, where poor education is strongly negatively correlated with service utilization. The relationship maintains along the full continuum of maternal care: women with under seven years of education were 1.5 times more likely to have an unmet need for contraception than those with over seven years education;[85] women with a high school education or higher were more 3.2 times more likely to receive any antenatal care than those with an elementary education or lower;[86] women with a college education or higher were 2.9 times more likely to give birth in a hospital than those who were illiterate.[87] According to a 2006 study of rural regions of the PRC, the low rate of service utilization resulting from low levels of education was the single greatest contributor to maternal mortality by a wide margin.[88]Furthermore, low levels of education correlate strongly with limited knowledge of contraception, the warning signs of birth complication, and maternal health more broadly.[89] Even husbands' level of education had a significant statistical effect on maternal and childcare utilization.[90]

Language barriers constitute another widespread educational obstacle to health services utilization. Low levels of education impede Tibetans' effective communication with Mandarin-speaking healthcare providers and even the reading of instructions on pharmaceutical prescriptions, which in Tibet are printed widely in Mandarin.[91]

Finally, low levels of education perpetuate the ignorance of safe maternal and childcare practices that do direct damage to patient health. One example of this effect, from a 2004 study conducted in the Surmang region of Qinghai Province where the rate of formal female schooling was 15%, was that in 94% of recent home births, an unsterilized instrument was used to sever the umbilical cord.[92]

It is clear that the very low levels of education and health awareness in many Tibetan populations result in high-risk pregnancy, birth, and childcare practices, poor

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[85] Decat, P., Zhang, W.H., Moyer, E., Cheng, Y., Wang, Z.I., Lu, C.Y. et al. (2011). Determinants of unmet need for contraception among Chinese migrants: A worksite-based survey. *The European Journal of Contraception and Reproductive Health Care*. 16: 26-35.

[86] Cui, Y., Zhang, Q., Yang, L., Ye, J. & Lu, M. (2010). Effect of married women's beliefs about gender equity on their use of prenatal and delivery care in rural China. *International Journal of Gynecology and Obstetrics*. 111: 148-151.

[87] Feng, Xu, Guo & Ronsmans, *supra* note 53.

[88] Liang, J. et al., *supra* note 20, at 6-7.

[89] Zhao, Q., Kulane, A., Gao, Y. & Xu, B. (2009). Knowledge and attitude on maternal health care among rural-to-urban migrant women in Shanghai, China. *BMC Women's Health*.9: 5; Zhu, L., Qin, M., Du, L., Jia, W., Yang, Q., Walker, M.C. et al. (2009).Comparison of maternal mortality between migrating population and permanent residents in Shanghai, China, 1996-2005.*International Journal of Gynecology and Obstetrics*. 116: 401-407.

[90] Ip, W.Y., Chan, M.Y., Chan, D.S. & Chan, C.W. (2011). Knowledge of and attitude to contraception among migrant woman workers in mainlandChina. *Journal of Clinical Nursing*. 20: 1685-1695; Liu, X., Gao, W. & Yan, H., *supra* note 31, at 4-5.

[91] Scrempf, M. (2010). Between mantra and syringe: Healing and health-seeking behaviour in contemporary Amdo. In V. Adams, M. Schrempf, and S.R. Craig (Eds.), *Medicine between science and religion: Explorations on Tibetan grounds*. 165. New York: Berghahn Books.

[92] Wellhoner, M. et al. (2011). Maternal and child health in Yushu, Qinghai Province, China.*International Journal for Equity in Health*. 10: 42. 6.

patient-provider relationships, and the low rates of health services utilization that cause poor health outcomes.

Minority Ethnicity and Cultural Belief

Ethnicity and cultural belief are important, oft-neglected demand-side determinants of health and health equity.[93] The importance of ethnicity and cultural belief is evidenced in a 2010 study of maternal mortality in the PRC, which found that cultural beliefs concerning health had the third strongest influence on health inequity in every Tibetan region except Sichuan Province.[94]Though the PRC's National Bureau of Statistics no longer makes public comprehensive data disaggregated by ethnicity, the preceding assessment of maternal and child health in Tibet has proven that conditions among Tibetan populations are far worse than in the PRC on average.[95]

Poor maternal and child health outcomes in Tibet associated with ethnic minority status and cultural belief are primarily the result of low rates of health services utilization across the full continuum of care: in the five regions of the PRC with large Tibetan populations, utilization rates of antenatal care, hospital delivery and skilled healthcare providers at birth, postnatal care, and systematic health care for children under three and seven years of age were each very low.[96]Research supports this finding, showing that minority ethnicity is strongly negatively correlated with antenatal care in Western regions of the PRC, and that minority ethnicity is the strongest determinant by far of home birth.[97]

Though poverty and lack education play a large role in discouraging healthcare utilization, a number of widespread Tibetan cultural beliefs concerning pregnancy and birth are also largely to bear. The first set of beliefs concern where birth should occur, and underlie a strong preference for home birth. Many Tibetan women prefer home birth out of the belief that malevolent spirits associated with sickness and death inhabit health facilities, and can cause harm to mothers and children.[98]Some women prefer home delivery because healthcare facilities are less able to respect important cultural needs. For example, modern delivery practices (such as pubic shaving and delivery in the lithotomy position) and the lack of sufficient privacy in healthcare facilities were found to be obstacles to service utilization for Tibetan women for whom privacy was of particular importance.[99]In the case of some home births, a belief that delivery involves

[93] U.S. Department of Health and Human Services, *supra* note 48; Commission on Social Determinants of Health, *supra* note 1, at 8, 18, 43.
[94] Liang, J. et al., *supra* note 20, at 4-8.
[95]*See* Chapter V. In the Shadow of Development: The Current State of Maternal and Child Health in Tibet
[96]China National Population and Family Planning Commission. (2010). *China population and family planning yearbook*.508, 509, 513.
[97] Liu, X., Gao, W. & Yan, H. (2014). Measuring and decomposing the inequality of maternal health services utilization in Western Rural China.*BMC Health Resources Research*. 14(102). 4-5. Retrieved from http://www.biomedcentral.com/1472-6963/14/102; Long, Zhang, Xu, Tang, & Hemminki, *supra* note 75.
[98] Adams, Chertow, Craig, Miller & Varner, *supra* note 3.
[99]*Id*.

spiritual pollution(*skye sgrib*) leads women to give birth outside the home itself in an effort to prevent pollution of the home and provocation of household and local protector deities (*yul lha*). Conditions in these locations, such as animal sheds and fields, are much less hygienic, exposed to harsh climate, and less comfortable.[100] Finally, Tibetan conceptions of birth as a private responsibility of the mother leads many Tibetan women to feel like they have no right to demand maternal care; this inclination precludes them from spending family resources on hospital delivery and maternal care generally.[101]

Cultural beliefs concerning healthcare providers also serve as disincentives to health services utilization. Strong conceptions of "insider" groups (*nang mi:* usually family, local, or Tibetan) and "outsider" groups (*phyi mi*: usually non-local, Han Chinese, or foreign) within Tibetan communities often determine the providers from whom maternal and childcare is sought.[102] Tibetan women take into account the ethnicity of care providers when making decisions regarding healthcare utilization, and strongly prefer Tibetan care providers to Chinese providers.[103] Hospital delivery and the attendance of birth by a skilled healthcare provider are sometimes avoided out of the belief that dangerous spirits can accompany strangers and care providers into hospitals and homes. When delivery does occur in the home context, fear of spreading spiritual pollution to family members and birth attendants makes some women hesitant to accept care during birth.[104] Finally, ethnic minority women have reported feeling too shy to seek care from healthcare facilities with entirely male staff, and have a strong preference for female care providers.[105]

Low levels of trust in government healthcare constitute yet another cultural obstacle to healthcare utilization. The traumatizing experiences of some Tibetan women with government healthcare act as a severe disincentive to healthcare seeking. In large part, these experiences concern the mass campaigns of abortion and sterilization that were conducted by the PRC throughout the 1980s and 1990s, and that continue in some areas of Tibet today.[106]Furthermore, because government healthcare providers are often also responsible for reporting Tibetan women's violations of birth planning policies, even Tibetan doctors are considered untrustworthy agents of the government.[107]

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[100] Adams, Chertow, Craig, Miller & Varner, *supra* note 3, at 826-829.
[101] Conversation with a Trainer of Community Health Workers, *supra* note 6.
[102] This "insider/outsider" binary and its effect on birth practice was clearly evident in the responses of participants in a TCHRD survey concerning maternal and child health in Tibet. One survey participant conveyed her family's sense that whatever may happen during delivery, it should happen at home among family.
[103] Scrempf, M. (2010-2011). Re-production at stake: experiences of family planning and fertility among Amdo Tibetan women. *Asian Medicine*. 6: 333-335. DOI: 10.1163/15734218-12341237
[104] Adams, Chertow, Craig, Miller & Varner, *supra* note 3.
[105] Lumpkin, *supra* note 3, at 13.
[106] Greenbaugh, S. (2008). Globalization and population governance in China. In A. Ong and S.J. Collier (Eds.) *Global Assemblages: Technology, Politics, and Ethics as Anthropological Problems*, 354-372. Malden, Massachusetts: Blackwell; Zhang, Weiguo (2002). *Chinese economic reforms and fertility behaviour: A study of a north-China village*. London: China Library.
[107] Scrempf, *supra* note 104, at 333-334.

It is evident therefore that frequently neglected considerations of spiritual belief, trust, privacy, and previous interactions with government healthcare are each responsible in part for the low rates of service utilization and high-risk pregnancy and birth practices that contribute to poor health outcomes in Tibet.

Gender

Gender is an influential structural determinant of maternal and child health in Tibetan regions, where gender bias influences social norms and where men usually inhabit the dominant position in the family. In many Tibetan communities, women are disadvantaged with regard to the power, financial responsibility, division of labour, and health practice that influence maternal and child health outcomes.[108]

Gender-based obstacles to positive health outcomes largely stem from the lack of gender equity awareness that is a feature of many Tibetan communities.[109] Gender inequity appears to be problematic for rural communities especially, where a 2004 study found that as many as 60% of surveyed women agreed that "the husband's health is more important than the wife's."[110] Because gender equity awareness between husband and wife is proven to correlate positively with maternal care services utilization,[111] gender inequity in rural Tibetan communities presents an obstacle to women and female children receiving appropriate care.[112] The social preference for male children in rural Tibetan communities is an outgrowth of lacking gender equity awareness with serious consequences for maternal health services utilization.[113] Not only are women with an existing male child less likely to seek out maternal care for subsequent pregnancies than those who have yet to give birth to a male son,[114] but they are also less likely to stop heavy manual labour before birth.[115]

Gender-based challenges to good health outcomes also arise as the result of inequitable distributions of power within the family unit. In many Tibetan and rural families, husbands are responsible for financial decision-making, leaving women disadvantaged with regard to the consumption of non-routine (and in some cases even

[108] *Id*., at 328-333; Commission on Social Determinants of Health, *supra* note 1, at 60-71.
[109] Scrempf, *supra* note 104, at 331.
[110] Cui, Zhang, Yang, Ye & Lu, *supra* note 87.
[111] Short, S. & Zhang, F. (2004). Use of maternal health services in China. *Population Studies (Cambridge)*. 58: 3-19.
[112] This finding was confirmed in conversation with a Qinghai-based community health worker, who reported that many Tibetan women lack a sense of entitlement to maternal care and therefore feel no basis for demanding care.
[113] This preference is also the result of the high labour demands of the agro-pastoral lives of many rural-living Tibetan families.
[114] Chen, J., Xie, Z. & Liu, H. (2007). Son preference, use of maternal health care, and infant mortality in rural China.*Population Studies (Cambridge)*.61: 161-183; Ying, C., Li, Y. &Hui, H. (2011).The impact of husbands' gender equity awareness on wives' reproductive health in rural areas of China.*Obstetrical and Gynecological Survey*. 66: 103-108.
[115] Li, J. (2004). Gender inequality, family planning, and maternal and child care in a rural Chinese county. *Social Science & Medicine*. 59: 695-708.

routine) goods and services,[116] including healthcare. Gender inequity also limits women's agency in determining their own procreative status, and often creates hazards to maternal and child health. In rural areas for example, male spouse's disapproval of contraception was a significant barrier to its use,[117] and in some cases, women were denied the choice of location for delivery.[118]

Further challenges are the result of gender inequity as it is reflected in families' male/female division of labour. Particularly in impoverished, rural regions, women are responsible for both household and farm work, leaving little time for seeking maternal care at distant health facilities and even for personal maternal care.[119] Studies have found for example that because free time was severely limited, many women chose not to seek out maternal care even when hospital delivery and maternal care services were fully subsidized, and continued doing household work and manual labour throughout pregnancy and as early as two days after delivery.[120] Finally, the Tibetan feminine ideal of the "strong and hard-working wife" likely colour women's perceptions of when maternal care is necessary, and contributes to the reported perception that institutional delivery is required only in rare cases.[121]

It is evident therefore that gender inequity constitutes a challenge to the maternal and child health of rural Tibetan communities in three main ways. Often lacking a sense of entitlement to maternal care, women do not demand (and consequently fail to receive) adequate care; often disadvantaged with regard to familial power dynamics, women are disallowed from shaping their own procreative and maternal health; often pressured by social norm and required by economic necessity to work through pregnancy and the postnatal period, women and their children are made vulnerable to health complications.

Conclusions

Demand-side structural determinants present three broad challenges to the achievement of good maternal and child health and effective healthcare.

The first is the use of home-based self-treatment practices that directly increase the risks of morbidity and mortality associated with pregnancy, infancy and early childhood. The most prevalent and consequential of such practices are home delivery

[116] Short & Zhang, *supra* note 113; Yang, L., Lu, M.T., Cui, Y., Deng, L.N. & Tian, X.B. (2009). Gender analysis on prenatal care in rural areas of Xinjiang and Anhui province. *Chinese Journal of Epidemiology*. 30: 1025-1029.
[117] Hong, H., Qin, Q.R., Li, L.H., Ji, G.P. & Ye, D.Q. (2009). Condom use among married women at risk for sexually transmitted infections and HIV in rural China. *International Journal of Gynecology and Obstetrics*. 106(3): 262-265.
[118] Du, Q., Nass, O., Bergsjo, P. & Kumar, B.N. (2009). Determinants for high maternal mortality in multiethnic populations in western China.*Health Care for Women International*. 30: 957-970.
[119]Lumpkin, *supra* note 3, at 12; China Ministry of Health, WHO, UNICEF, UNFPA, *supra* note 11.
[120]*Id*., at 7.
[121] Tan, Huang, Yang, et al., *supra* note 14, at 6-7.

(especially those that occur in unhygienic spaces and in the absence of a skilled care provider) and the severance of umbilical cords with unsterilized instruments.

The second challenge is the severely limited access of many Tibetan communities to maternal and child healthcare. This issue is of particular consequence for rural and remote populations, and is so pervasive that it stems from almost every demand-side determinant of health. Factors of geographic location (physical/temporal distance to care facilities, limited transportation infrastructure and vehicle availability, etc.), socioeconomic status (prohibitive costs of transportation and care services, etc.), and education (unawareness of the importance of perinatal care and skilled birth attendance, language barriers to effective communication with care providers and use of biomedicines, etc.) appear to be the most limiting by far. However, significant limitations also stem from gender inequality in the social realm, such as the prioritization of male health, female-heavy divisions of labour, and male ownership of financial and procreative decision-making. These barriers prevent women and young children from receiving the appropriate, timely care that reduces risk and prevents mortality. Too often, severely limited access means that mothers and infants receive no healthcare at all.

The third broad challenge is Tibetan populations' limited utilization of accessible maternal and child healthcare services.[122] Though low utilization rates are the result of a number of demand-side determinants, the lack of education appears to be the leading cause. Health education not only reduces risks associated with home-based self-care, but also develops the very awareness of the importance of skilled maternal and child healthcare that prompts care seeking. Other factors, mainly associated with minority ethnicity and cultural belief (strong preferences for home birth, strict privacy, and female Tibetan ethnicity care providers, and discomfort with some institutional care practices) and gender (lack of gender equity awareness, women's limited agency over their own reproductive status, prioritization of male health) also appear to have highly influential effects on Tibetan populations' health services utilization. Finally, factors associated with socioeconomic level are of the utmost importance for utilization, as maternal and child healthcare is often neglected when families' financial resources are scarce.

Although geographic and socioeconomic conditions appear to be the greatest causes of limited access and limited utilization, minority ethnicity and cultural belief, gender inequality, and low levels of education are also major statistically significant causes. Such factors are rooted not just in the patient's immediate circumstances, but also to a large degree in the familial, social, and cultural environments that are largely unaddressed by the Chinese system of healthcare in Tibet. It is evident therefore that neglect of these "soft" determinants of poor health have contributed significantly to the poor state of maternal and child health in Tibetan regions of the PRC.

Finally, it is important to note that the three major demand-side challenges to maternal and child health are highly interrelated and often cumulative in effect. Access

[122] Here, the term "utilization" is delineated from the term "access," where "access" indicates the possibility of a patient receiving care, and "utilization" indicates the patient's decision either take advantage of or decline services to which he or she has access.

to healthcare is a precondition for service utilization, and both limited access and limited utilization make necessary the home-based self-treatment practices that put pregnant women and young children at increased risk.[123]

D. Failures in Health System Governance

Since the early 2000s, the dominant strategy of the National Health and Family Planning Commission (NHFPC) for improving maternal and child health outcomes has been to provide healthcare via a centralized clinical model of service delivery. This strategy prioritizes health services delivery for women and children via hospital-based care at the county level, and to a lesser degree, at the township level.[124]

The guiding logic of the centralized clinical system is efficiency-driven and twofold in nature. First, the centralized system apparently aims to maximize efficiency in health services delivery by concentrating obstetric and neonatal care at county hospitals and township health centres (THCs). In doing so, it avoids the immense financial inputs that would be required to offer a comprehensive package of basic and emergency maternal and child care services at the grassroots (i.e. village) level. Second, because intrapartum complications occurring in the home context present the greatest threats to both maternal and child survival,[125] and because health facilities at the county level have greater emergency care resources, government has made hospital delivery the highest priority of its efforts to improve outcomes, especially in rural and remote areas.

Insofar as government health interventions that encourage hospital delivery have reduced maternal mortality in rural areas, institutional delivery is a very valuable methodfor improving health outcomes.[126]However, the extremely poor health outcomes and immense disparities with national conditions that characterize the health of Tibetan regions make readily apparent the fact that the centralized clinical model championed by government has been vastly insufficient in meeting maternal and child health needs in Tibet - especially those of impoverished, rural populations.

Unperceived Constraints, Unmet Needs

The first shortcoming of the centralized clinical model of service delivery is its failure recognize and address the diverse range of causes of poor health outcomes in

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[123] Jing, F. (2004). Health sector reform and reproductive health services in rural China.*Health Policy and Planning*. 19 (Suppl. 1): i46. Oxford University Press. DOI: 10.1093/heapol/czh044

[124] Liang, Zhu, Dai, Li, Li, Wang, *supra* note 68, at 95.

[125] Feng et al., *supra* note 57, at 1493.

[126] Feng et al., *supra* note 57; Liang, J., Li, X., Dai, L., Zeng, W., Li, Q., Li, M., Zhou, R. et al. (2012). The changes in maternal mortality in 1000 counties in mid-western China by a government-initiated intervention.*PLoS ONE*. 7(5).e37458. 6-8. DOI:10.1371/journal.pone.0037458; Liu, X., Yan, H. & Wang, D. (2010). The evaluation of "Safe Motherhood" on maternal care utilization in rural western China: a difference in difference approach. *BMC Public Health*. 10: 566. 4-5. http://www.biomedcentral.com/1471-2458/10/566

Tibetan populations. In so doing, it excludes immense numbers of women and children from the system of health.

Though the NHFPC has correctly identified the central biomedical and socioeconomic causes of poor maternal and child health, it has failed to apprehend the many non-economic impediments to access and utilization that so dramatically influence health outcomes. Major demand-side determinants of low access and utilization, including geographic, educational, and cultural barriers, are unaccounted for by the centralized clinical strategy that amounts to little more than encouraging delivery in hospitals. The NHFPC's conception of the problems underlying poor health is far too narrow and leaves many of patients' constraints unaddressed and unmet. The result is that impoverished, poorly educated Tibetan populations in rural and remote areas are excluded from the system of health altogether, with no alternatives for emergency and even basic maternal and child healthcare. Because it takes a narrow view of the constraints of Tibetan populations, the centralized clinical system falsely assumes a high level of consumer demand for institutionalized care, where in reality many women still cannot access care, or choose not to utilize available services. The result of this false assumption is that the potential for improvement in maternal and child health is severely limited before it is even implemented.

The failure of the centralized system to meet patients' constraints is evident in research that showed that even when hospital delivery was fully subsidized, a significant number of women still either could not or chose not to utilize the service.[127]This point is underscored by the fact that as early as 2005, hospital delivery rates stalled at only 60% in poor, rural areas.[128]

Efficiency for Whom?

The second failure of the State's centralized clinical model for service delivery is that in its drive for efficient resource allocation, government budgets are accommodated at the expense of improvements in health outcomes. For government, the centralization of services means significant savings on healthcare facilities, personnel, equipment, and administration; generally it translates to a smaller, more manageable, and less expensive system of health. For rural-living patients, centralization means the contraction of services away from home; it translates to prohibitive transportation costs, longer travel times, decreased exposure to life-saving maternal and child health education, and greatly decreased access to care overall.

One major consequence is that when birth complications and neonatal crises occur, many women and children are stranded - left without local options for skilled maternal care. A second major consequence is that women avoid seeking care for themselves and their children until emergency conditions necessitate it. Such late-stage

[127] World Health Organization (2006). The challenges of safe motherhood issued and lessons learned. Geneva: World Health Organization.
[128] Feng, Xu, Guo & Ronsmans, *supra* note 53, at 436.

care seeking precludes the possibility of the early detection of complications that is so critical to preventing mortality. Furthermore, it permits the development of preventable risks into life-threatening conditions, and perpetuates widespread preventable mortality.

Ultimately, the effect of centralization is that the primary responsibility for overcoming barriers to access and utilization is shifted onto patients. In a setting in which the population has adequate socioeconomic resources and relatively equitable structural conditions, this division of responsibility would be both fair, and likely to yield acceptable, equitable outcomes. However, it should be no surprise that in the context of rural Tibetan populations, which are largely 1.) disempowered by a combination of poor geographic, socioeconomic, educational, and gender equity conditions; 2.) severely disadvantaged with regard to access and utilization of healthcare; and 3.) at a high level of risk for morbidity and mortality; the government's devolution of responsibility to patients has yielded poor, inequitable outcomes. In essence, the State's centralized approach hands the greatest responsibility for accessing healthcare to the population at the greatest disadvantage for meeting it. Such an approach is clearly counterproductive to the State's own goal of improving health outcomes. Furthermore, it effectively constitutes the State's renunciation of the leadership role for improving maternal and child health.

Of course, no government agency can ignore the cost implications of healthcare policy-making, and even the wealthiest of governments cannot afford to abandon considerations of efficiency during policy formation. But for the TAR, which suffers from the worst state of maternal and child health in the PRC by far, and allocates the smallest proportion of its resources to the health sector, *considerable* latitude exists between financing major improvements in maternal and child healthcare and ignoring cost efficiency altogether.

Disempowering Rural Healthcare

Since the 1980s, fiscal responsibility for healthcare has largely been decentralized to township and county governments, and central government support for healthcare at the village, township, and county levels has significantly declined.[129] Currently, government at each administrative level is expected to fund its operating budget for healthcare out of tax revenue.[130] Because the major proportion of Tibetans live in impoverished and economically underdeveloped administrative regions, local governments in these areas generate the smallest revenues by far, and wide disparities in healthcare financing have developed between poor, rural areas and wealthier, urban areas. The result is that poor, rural areas with the worst maternal and child health have the least developed systems of healthcare; this includes fewer and poorer quality health facilities,

[129] *Id*., at 432; Jing, *supra* note 122, at i41-i42; Wagstaff, A., Lindelow, M., Wang, S. & Zhang, S. (2009). Reforming China's rural health system. For the World Bank, *Directions in Development*. 153-154.
[130] China Ministry of Health, WHO, UNICEF, UNFPA (2006). Joint review of maternal and child survival strategies in China. Report. 29. Beijing, China

personnel, and services.[131] In essence, fiscal decentralization compounds the issues of healthcare access and quality that afflict the centralized system of health services delivery.

It should be noted that fiscal decentralization is not inherently a barrier to health equity and good health outcomes. Insofar as financial decentralization improves the ability of local government to address the specific needs and preferences of its people, it would appear to strengthen local healthcare. Therefore, it is rather the inability of local governments to generate sufficient revenue and the lack of targeted support from government at higher administrative levels that makes fiscal decentralization a primary cause of poor and inequitable health outcomes.

[131] Feng, Xu, Guo & Ronsmans, *supra* note 53, at 436; Wagstaff, Lindelow, Wang & Zhang, *supra* note 129.

VII. The State of Maternal and Child Health in Tibet Constitutes a Violation of Tibetans' Human Right to Health

The PRC's mismanagement and neglect of maternal and child healthcare in Tibet constitutes a violation of Tibetan women and children's internationally protected right to health. Not only has the PRC failed to provide the essential components of the right to health in Tibet, but it has also failed to meet the core minimum obligations of the right to health. In failing to do so, the PRC is in violation of three major international treaties to which it is a party: 1.) the 1966 International Covenant on Economic, Social and Cultural Rights (ICESCR),[1] 2.) the 1979 Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW),[2] and 3.) the 1989 Convention on the Rights of the Child (CRC).[3]

The PRC Has Failed to Provide the Fundamental Components of the Right to Health

The Committee on Economic, Social and Cultural Rights (CESCR) has determined that "the right to the highest achievable standard of health" is met when the underlying determinants of health and a system of healthcare are provided under the conditions of availability, accessibility, acceptability, and good quality, in accordance with the principles of non-discrimination and equity.[4] The PRC has failed to provide each of these essential components of the right to health.

The PRC has failed to ensure at least three of six underlying determinants of health: 1.) adequate supplies of safe food, 2.) good nutrition, and 3.) health-related information and education. Severe malnutrition affects between three and four out of every one hundred children in the TAR, and severe maternal malnutrition is also reported.[5] This failure to provide adequate supplies of food and good nutrition violates

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[1] International Covenant on Economic, Social, and Cultural Rights, United Nations G.A. Res. 2200A (XXI) (New York, 16 Dec. 1966) 993 U.N.T.S. 3, *entered into force* 3 Jan. 1976 [*hereinafter* ICESCR]

[2] Convention on the Elimination of All Forms of Discrimination Against Women, United Nation G.A. Res. 34/180 (New York, 18 Dec. 1979) 1249 U.N.T.S. 13, *entered into force* 3 Sept. 1981 [*hereinafter* CEAFDAW]

[3] Convention on the Rights of the Child, United Nations G.A. Res. 44/25 (New York, 20 Nov. 1989) 1577 U.N.T.S. 3, *entered into force* 2 Sept. 1990 [*hereinafter* CRC]

[4] United Nations Committee on Economic, Social and Cultural Rights (CESCR), *General Comment No. 14: The Right to the Highest Attainable Standard of Health*, 11 August 2000, E/C.12/2000/4, 2, retrieved from http://tbinternet.ohchr.org/_layouts/treatybodyexternal/ TBSearch.aspx?TreatyID=9&DocTypeID=11 [*hereinafter* CESCR General Comment No. 14]; Human Rights Fact Sheet No. 31: The Right to Health (Office of the United Nations High Commissioner for Human Rights, Geneva, June 2008), 3, retrieved from http://www.ohchr.org/Documents/Publications/Factsheet31.pdf [*hereinafter* HR Fact Sheet No. 31].

[5] China National Population and Family Planning Commission. (2010). *China population and family planning yearbook*.508, 509, 513 [*hereinafter* China Population and Family Planning Yearbook (2010)]; Lumpkin, T.W. (2005).*Maternal and child health care in Gargon: Findings from surveys, focus groups, and clinical data*. Gar Tibet Health Project. 12. Retrieved from www.tibethealthproject.org/docs/GTHP%20Needs%20Assessment %20Report.pdf

the ICESCR, the CEDAW, and the CRC.[6] The PRC has also failed to provide adequate health-related information and education. A lack of general and health education is widely cited to be one of the leading causes of poor maternal and child health in Tibet.[7] This violates rights in the CEDAW and the CRC.[8]

Despite improvements in maternal and child healthcare at the national level,[9] the system of healthcare in Tibet is severely underfunded,[10] offers extremely limited access to care,[11] and often provides poor quality care. Generally, it has failed to address the needs of Tibetan women and children and to yield positive, equitable outcomes, as evidenced by the high rates of morbidity and mortality in the TAR.[12] The PRC's failure to develop a broad and effective system of basic maternal and child healthcare violates multiple articles of the ICESCR, CEDAW, and CRC.[13]

The PRC has failed to ensure that healthcare services are accessible, available, acceptable, and of good quality. The accessibility of healthcare, which is the lowest by far in Tibet and which constitutes the greatest challenge to positive health outcomes, has not been ensured, especially in rural and remote areas.[14] Severely limited and inequitable access to care is in violation of the ICESCR, the CEDAW, and the CRC.[15] In areas of Tibet where healthcare is accessible, it is often not available. Frequent shortages of essential drugs, equipment, and obstetric and neonatal doctors undermine the provision of adequate care.[16] Furthermore, the healthcare system in Tibet has been unable to provide care that is culturally acceptable to Tibetans, such as basic privacy in healthcare facilities and female Tibetan doctors.[17] Finally, good quality healthcare has not been ensured,

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[6] ICESCR, *supra* note 1, at art. 11(1); CEDAW, *supra* note 2, at art. 12(2); CRC, *supra* note 3, at art. 24(2)(c).
[7] See Chapter VI.
[8] CEDAW, *supra* note 2, at art. 10(h); CRC, *supra* note 2, at art. 24(2)(e).
[9]United Nations System in China, Ministry of Foreign Affairs of the People's Republic of China. (2013). *China's progress towards the millennium development goals: 2013 report*. 27-35. Retrieved from http://www.cn.undp.org/content/dam/China/docs/Publications/ UNDP-CH-MDGs2013_english.pdf
[10]National Bureau of Statistics of China. (2013). *National Statistical Yearbook*. Chapter 9-6.
[11] Han, Y., Wei, J., Song, X., Barber, S.J., Wen, C. & Zheng, X. (2012). Accessibility of primary health care workforce in rural China.*Asia-Pacific Journal of Public Health*. 24: 835. DOI: 10.1177/1010539511403801
[12]China Population and Family Planning Yearbook, *supra* note 5; See Chapters V and VI.
[13] ICESCR, *supra* note 1, at art. 12(2)(d), 10(2), 10(3); CEDAW, *supra* note 2, at art. 12(1), 12(2), 14(1), 14(2); CRC, *supra* note 3, at art. 3(3), 18(2), 24(2)(b), 24(2)(c).
[14] Han, Wei, Song, Barber, Wen & Zheng, *supra* note 11; See Chapters IV, and VI, Sections B, C, and D.
[15] ICESCR, *supra* note 1, at art. 12(2)(d); CEDAW, *supra* note 2, at art. 12(1), 12(2), 14(2)(b); CRC, *supra* note 3, at art. 24(2)(B), 24(2)(d).
[16]China Ministry of Health, WHO, UNICEF, UNFPA (2006). Joint review of maternal and child survival strategies in China. Report. 29. Beijing, China; Liang, J., Dai, L., Zhu, J., Li, X., Zeng, W., Wang, H., Li, Q. et al. (2011). Preventable maternal mortality: geographic/rural-urban differences and associated factors from the population-based maternal mortality surveillance system in China. *BMC Public Health*.11: 6. Retrieved from http://www.biomedcentral.com/1471-2458/11/243; Lu, J., Shen, J., Chen, G., Moseley, C.B., Sun, M., Gao, F., Wang, Y. et al. (2011) Regional disparities in prenatal care services in rural China. *Asia-Pacific Journal of Public Health*. 23(5): 682-698. doi:10.1177/1010539511418356
[17] See Chapter VI, Section C, "Minority Ethnicity and Cultural Belief"; Adams, V., Chertow, J., Craig, S., Miller, S. & Varner, M. (2005). Having a "safe delivery": Conflicting views from Tibet. *Health Care for Women International*. 26: 829-831. DOI: 10.1080/07399330500230920; Lumpkin, T.W. (2005). *Maternal*

especially in rural areas, where care is often inconsistent with medical best practices, services are limited as a result of shortages of equipment, poorly trained personnel are widespread, and supervision of providers is often non-existent.[18]

The PRC has failed to ensure that healthcare in Tibet functions according to the guiding principles of non-discrimination and equity. There is a dearth of information concerning discrimination in the health system against Tibetans; however, qualitative field studies have noted that healthcare providers' sometimes display discriminatory attitudes toward Tibetans, suggesting that the issue may be significantly under-reported.[19] Where discrimination does occur it violates the ICESCR.[20] Furthermore, there is no health equity between Tibet and the PRC. In the TAR, health conditions and healthcare in 2010 were far worse than the PRC on average according to every indicator of maternal and child health evaluated, and by wide margins.[21] Such dramatic inequity violates multiple articles of the CEDAW.[22]

The PRC Has Failed to Meet Its Core Obligations Associated with the Right to Health

The CESCR has recognized 10 core obligations (COs) that States parties to the ICESCR must meet in order to fulfil the minimum level of the right to health.[23] Though these core obligations are not legally binding, the degree to which States meet these obligations is a valuable measure of how well they have fulfilled citizens' right to health.

The PRC has failed to meet 7 out of the 10 core obligations. As discussed in the preceding section, the PRC has not ensured "access to health facilities, goods, and services…especially for vulnerable or marginalized groups" (CO1)[24] or "access to the minimum essential food…to ensure freedom from hunger" (CO2).[25] Neither has the PRC

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and child health care in Gargon: Findings from surveys, focus groups, and clinical data. Gar Tibet Health Project. 5. Retrieved from http://www.tibethealthproject.org/docs/GTHP%20Needs%20Assessment %20Report.pdf

[18] Han, Y., Wei, J., Song, X., Barber, S.J., Wen, C. & Zheng, X. (2012). Accessibility of primary health care workforce in rural China.*Asia-Pacific Journal of Public Health*.24: 835. DOI: 10.1177/1010539511403801; Eggleston, K., Ling, Li., Qingyue, M., Lindelow, M. &Wagstaff, A. (2008). Health service delivery in China: A literature review. *Health Economics*. 17:149-165. 152. DOI: 10.1002/hec.1306; United Nations System in China, *supra* note 6; Conversation with a Trainer of Community Health Workers based in Yushu Tibetan Autonomous Prefecture, Qinghai Province, December 12, 2014.

[19] Tan, L.F., Huang, C.L., Yang, R.R. et al. (2012). Study on the accessibility of maternal health services for Tibetan women in agricultural and pastoral areas in Yushu Autonomous Prefecture. Population Research Institute. Beijing: Beijing University. 7.

[20] ICESCR, *supra* note 1, at art. 2(2); CEDAW, *supra* note 2, at art. 12(1).

[21] See Chapter V, Section B, "Analysis of Results"

[22] CEDAW, *supra* note 2, at art. 12(1), 14(1), and 14(2).

[23] For the complete list of core obligations, see Chapter II, Section B.; United Nations Committee on Economic, Social and Cultural Rights (CESCR), *General Comment No. 14: The Right to the Highest Attainable Standard of Health*, 11 August 2000, E/C.12/2000/4, 2, retrieved from http://tbinternet.ohchr.org/_layouts/treatybodyexternal/ TBSearch.aspx?TreatyID=9&DocTypeID=11

[24] See Chapter VI, Section B., "Physical Infrastructure" and "Personnel," and Section C., "Conclusions."

[25]China Population and Family Planning Yearbook, *supra* note 5, at 513; Lumpkin, *supra* note 4.

ensured access to "essential drugs" (CO4), especially in rural areas of Tibet, as crucial drugs such as misoprostol (used for the prevention of obstetric haemorrhage) have been widely reported.[26] The "equitable distribution of all health facilities, goods, and services" (CO5) is far from being achieved in Tibet, where the pro-urban bias of the centralized system of health services delivery fosters disparities in access to care intra-regionally (between rural and urban areas), inter-regionally, and between Tibet and the PRC on average.[27] Adequate maternal and child healthcare (CO6) has not been ensured in Tibet, where in the TAR only 33% of women and 41% of children receive systematic care.[28] Neither has "education and access to information concerning…health problems" (CO9) been sufficiently provided in Tibet, where 59% of women never attended school, adult illiteracy is at 41%, and access to health facilities is the lowest in the PRC.[29] Lastly, "appropriate training for health personnel" (CO10) has not been achieved in Tibet and remains a major issue for those rural residents that have access to care.[30]

The PRC has failed to fulfil the CESCR's standard for meeting the minimum level of health. This is a violation of the right to health.

The PRC Has Failed to Uphold Constitutional Guarantees of Healthcare for Tibet's Women and Children

The PRC's failure to ensure healthcare and positive health outcomes for the women and children of Tibet is not only a violation of international law – it also in direct violation of the PRC's own Constitution.

The Constitution establishes the State's responsibility in providing healthcare. It places particular emphasis on protecting women and children, and asserts both the equality of the nationalities and the State's responsibility for providing special assistance to disadvantaged minority populations. Article 21 requires the State to protect the health of the people by providing "health and medical services."[31] Article 45 gives citizens the right to State support in the form of "health services and assistance" when ill.[32]According

[26] Liang, Dai, Zhu, Li, Zeng, Wang, Li, et al., *supra* note 16.
[27] See Chapter V, Section B, "Analysis of Results" and Chapter VI, Sections B and C.
[28] See Chapter V., Section B, "Analysis of Results"; China Population and Family Planning Yearbook 2010, *supra* note 5, at 508, 513.
[29] See Chapter VI, Section C, "Level of Education"; National Bureau of Statistics of the People's Republic of China (2010) *National Population Census*. Department of Population and Employment Statistics; Statista. (2014). *Illiteracy rate in China in 2012 by region*. Retrieved from http://www.statista.com/statistics/278568/ illiteracy-rate-in-China-by-province/; Han, Y., Wei, J., Song, X., Barber, S.J., Wen, C. &Zheng, X. (2012). Accessibility of primary health care workforce in rural China.*Asia-Pacific Journal of Public Health*. 24: 835. DOI: 10.1177/1010539511403801
[30] See Chapter VI, Section B, "Personnel"; Anand, S., Fan, V.Y., Zhang, J., Zhang, L., Ke, Y., Dong, Z & Chen, L.C. (2008). China's human resources for health: quantity, quality, and distribution. The Lancet. Vol. 372: 1779-1780. DOI:10.1016/S0140- 6736(08)61363-X
[31]Constitution of the People's Republic of China. Adopted by the 5th National People's Congress, 4 Dec. 1982, amended 14 Mar. 2004, art. 21. Retrieved from http://www.npc.gov.cn/englishnpc/Constitution/node_2825.htm [*hereinafter* Constitution of the PRC]
[32]*Id*., at art. 45.

to Article 49, mothers and children in particular are entitled to be "protected by the state."[33] Finally, Article 4 states that "The state protects the lawful rights and interests of the minority nationalities and upholds and develops the relationship of equality…among all of China's nationalities…The state helps areas inhabited by minority nationalities speed up their…development in accordance with the peculiarities and needs of the different minority nationalities."[34]

The PRC has failed to uphold each of these Constitutional guarantees. In violation of Articles 21 and 45, the PRC has failed to provide accessible systematic healthcare for an immense proportion of Tibet's women and children.[35] The centralized clinical model of health services delivery, which forms the basis of healthcare in Tibet, has not only failed to achieve adequate healthcare coverage, but it has shifted the burden for overcoming obstacles to healthcare onto those impoverished, rural, and poorly-educated communities that are least capable of doing so.[36] In violation of Article 49, the PRC has failed to provide special protections for women and children in Tibet. Though special consideration has been given to protecting maternal and child health in the realms of both health policy and health services delivery, such considerations have proved highly ineffective in achieving actual protection, as evidenced by the very high rates of maternal and child mortality in Tibet.[37]

Finally, in violation of Article 4, the PRC has failed severely to develop a "relationship of equality" between nationalities and to "help areas inhabited by minority nationalities speed up their development."[38] Severe inequality continues to be a pervasive feature of maternal and child health in Tibet and the PRC. Not only are health conditions far worse in Tibet than in the PRC on average,[39] but healthcare coverage is also consistently much lower.[40]Far from allotting additional resources for maternal and child health in Tibet, the regional government of the TAR spent the smallest proportion of its budget on healthcare of any region in the PRC in 2012.[41] Furthermore, though government programs targeting maternal and child health have been active since 2000 and have included parts of Tibet, they have been implemented at the national level. As of February 2015, little evidence existed of government-run maternal and child health programs aimed at improving conditions in Tibet specifically. Likewise, there was no evidence to indicate that regional or central government have made accommodations for Tibetans' particular "peculiarities and needs," especially those related to cultural and

[33] *Id*., at art. 49.
[34] *Id*., at art. 4.
[35] China Population and Family Planning Yearbook 2010, *supra* note 5, at 508, 513; See Chapter V.
[36] See Chapter VI, Section D., "Failures in Health System Governance at the Intersection of the Determinants of Health"
[37] China Population and Family Planning Yearbook 2010, *supra* note 5, at 509.
[38] Constitution of the PRC, *supra* note 31, at art. 4.
[39] China Population and Family Planning Yearbook 2010, *supra* note 5, at 508, 509, 513.
[40] *Id*.
[41] National Bureau of Statistics of China. (2013). *National Statistical Yearbook*. Chapter 9-6.

religious belief. In fact, the neglect of these very needs has been such that it constitutes a considerable barrier to better health services utilization and better health outcomes.[42]

Conclusions

In violation of its international and domestic legal obligations, the People's Republic of China has failed severely to fulfil Tibetan women's and children's right to the highest achievable standard of health. The highly inequitable and extremely poor healthcare and health conditions that continue to afflict Tibetan communities is in direct contravention of the ICESCR, the CEDAW, the CRC, and the Constitution of the PRC itself.

The PRC's mismanagement and neglect of maternal and child health in Tibet is not only in violation of the letter of these legal standards – it is also in clear violation of their spirit. That maternal and child healthcare in the TAR receives the worst funding of any region in the nation while its women die at rates 8 times higher[43] than in the PRC on average, and that the TAR receives no extraordinary government support for maternal and child health, is a clear indicator that the PRC has not truly committed itself to upholding the spirit of the international treaties and the Constitution by which it is legally bound.

[42] See Chapter VI, Section C., "Minority Ethnicity and Cultural Belief" and Section D., "Unperceived Constraints, Unmet Needs."
[43] China Population and Family Planning Yearbook 2010, *supra* note 5, at 508, 509, 513.

VIII. Paths Forward

A. The Fundamentals of Improvement

Overcoming Geographic Barriers to Care

In rural and remote areas, financial barriers to healthcare access are compounded by underdeveloped rural healthcare systems. As discussed in Chapter VI, the centralized clinical model of health services delivery and the decentralization of health system financing has created major supply-side barriers to healthcare access. Geographic access to care is also limited by certain demand-side conditions, such as limited transportation to health facilities, and the underdevelopment of rural road systems. As the barriers to healthcare access derive from both sides of the supply/demand divide, so too do opportunities for improving access.

The potential of demand-side solutions largely lies in increasing the availability of general and emergency transportation for patients. Though rates of vehicle ownership are likely to rise as the socioeconomic status of rural areas improves, such change cannot be relied upon to improve access to care, as the urgent state of poor health in Tibet clearly necessitates much more rapid intervention. Furthermore, because mountainous terrain makes air retrieval of emergency patients notoriously difficult, and as an undeveloped system of roads makes ambulance service highly inefficient,[1] State development of medical transportation is also an inadequate solution.

Greater potential lies in low-cost public-private transportation partnerships. In West Africa and Nigeria, partnerships with truck driver's unions successfully arranged for free or inexpensive transportation of children and pregnant women to healthcare facilities and successfully reduced maternal mortality as a result.[2] Such programs have been shown to be patient-friendly, sustainable, and cost-effective.[3] In the most remote areas of Tibet, where even commercial transportation is infrequent, community-based ride-sharing programs may be able to improve access to care.[4] However, these solutions have yet to be proven in remote mountainous contexts, and would likely yield patchy, untimely, and generally insufficient transportation coverage in sparsely populated rural Tibet. Therefore, the potential of demand-side solutions to overcome geographic barriers to access appears very limited.

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[1]Byrne, A., Hodge, A., Jimenez-Soto, E. & Morgan, A. (2014). What works? Strategies to increase reproductive, maternal and child health in difficult to access mountainous locations: a systematic literature review. *PLoS One*. 9(2): 5. E87683. DOI:10.1371/journal.pone.0087683

[2] Shhu, D., Ikeh, A.T. & Kuna, M.J. (1997). Mobilizing transport for obstetric emergencies in Northwestern Nigeria. The Sokoto PMM Team. International Journal of Gynecology and Obstetrics. 59(Suppl 2): S173-180; BBC World Service (2015). 2015: Where will we be? Case study: West Africa. Retrieved from http://www.bbc.co.uk/worldservice/specials/ 1112_mdg/page6.shtml

[3] Shhu, Ikeh, & Kuna, *supra* note 2.

[4] Lee, A.C.C., Lawn, J.E., Cousens, S., Kumar, V., Osrin, D., Bhutta, Z.A., Wall, S.N. et al. (2009). Linking families and facilities for care at birth: what works to avert intrapartum-related deaths? *International Journal of Gynecology and Obstetrics*. 107(Suppl 1): S65-S88. DOI: 10.1016/j.ijgo.2009.07.012.

The most promising solutions lie in State-sponsored (i.e. supply-side) interventions in health services delivery itself. Two such interventions are crucial to improving health outcomes and equity in Tibet. The first approach builds upon the strengths of the existing centralized clinical model of service delivery. By intensifying existing efforts to ensure that pregnant women and children receive both routine and emergency care in township health centres (THCs) and county hospitals, this approach improves access to care in areas already within physical reach of healthcare facilities.

This end is achieved first by ensuring that all THCs and county hospitals have the facilities, equipment, and personnel to offer basic (in the case of THCs) and comprehensive (in the case of county hospitals) emergency obstetric and neonatal care. The efficacy of such intervention in improving maternal and child health in remote, mountainous settings is proven: in a sparsely-populated region of Papua New Guinea's highlands, the upgrading of facilities alone reduced neonatal mortality by 44%.[5] Improving the existing clinical model also necessitates strengthening patient referral networks between village clinics, THCs, and county hospitals.[6]

Even an improved centralized system is unable to ensure the delivery of adequate healthcare, however. This is because the clinical model of service delivery requires that patients seek care at centralized facilities in administrative centres. In regions where socioeconomic status and developed transportation systems allow for patient access to healthcare facilities, this system has the potential to offer adequate service coverage. In Tibet however, where rural populations are often impoverished, dispersed over vast areas, and have limited access to transportation, a wide gap has developed between patients and healthcare facilities. Health facilities in Tibet are responsible for immense catchment areas, yet they are accessible to only a small proportion of the people living in these areas. As a result, large numbers of people are left without a single option for obstetric and neonatal care.

Therefore, the second crucial approach to overcoming geographic barriers to care is the development of a decentralized, community health worker-based system of service delivery in remote and rural areas. The goal of such a system is to deliver maternal and child healthcare to even the most remote communities via a system of home visits from community health workers (CHWs). Generally, community health workers are not medical professionals with a traditional education. Rather, they are lay medical outreach providers who receive targeted education in the provision of direct care and health education. Because CHWs are recruited from and reside within their service areas, they may easily provide essential services along the entire continuum of care – from early in the antenatal period to months after birth, from preventative to remedial care. Essential

[5] Duke, T., Willie, L., Mgone, J.M. (2000). The effect of introduction of minimal standards of neonatal care on in-hospital mortality. *PNG Medical Journal*. 43: 127–136.
[6] Barnes-Josiah, D., Myntti, C. & Augustin, A. (1998). The three delays as a framework for examining maternal mortality in Haiti. *Social Science & Medicine*. 46(8): 981-983; China Ministry of Health, WHO, UNICEF, UNFPA (2006). Joint review of maternal and child survival strategies in China. Report. 29. Beijing, China

CHW services include antenatal care visits, early initiation of supplemental maternal nutrition, early detection of birth complications and timely referral to a health facilities (where conditions allow), skilled assistance at birth, postnatal visits, neonatal care, and child vaccination.

Given the relatively limited training CHWs receive, CHW programs have proven remarkably effective in remote, sparsely populated, and mountainous contexts. In the Mastang region of Pakistan's Baluchistan Province for example, a cost-effective Lady Community Health Worker program increased the rate of skilled attendance at birth by 12%,[7] which coincided with a decrease in both maternal and child mortality of over 50%.[8] In the Jumla district of western Nepal, a volunteer female Community Health Worker program led to a 41% increase in care-seeking for child diseases and a 28% decrease in under-five child mortality in just three years.[9] A 2005 study of the impact-effectiveness of CHW programs found that "CHWs increase the coverage and equity of health service delivery compared with alternative modes of service organization."[10]

Data concerning the cost effectiveness of CHW programs for maternal and child health specifically is relatively limited, but available data has yielded promising results. A review of strategies for expanding immunization coverage in low resource settings has found that CHW programs were among the most cost effective of interventions.[11] It is significant that even unpaid CHWs in Nepal's Jumla district were able to effect such dramatic decreases in under-five child mortality.

Increasing Service Utilization

As access to maternal and child healthcare improves, barriers to service utilization will become an increasingly important issue. For this reason, ensuring the utilization of health services is the second fundamental component by which outcomes and equity in Tibet should be achieved.

The Critical Role of Education

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[7] Hafeez, A., Mohamud, B.K., Shiekh, M.R., Shah S.A.I & Jooma, R. (2011) Lady health workers programme in Pakistan: challenges, achievements and the way forward. *Journal of Pakistan Medical Association*. 61: 210–215. Retrieved from http://www.jpma.org.pk/full_article_text.php? article_id=2633

[8] Barzgar MA, Sheikh MR, Bile MK (1997) Female health workers boost primary care. *World Health Forum*. 18(2): 202–210. PMID: 9393010

[9] Pandey, M.R., Daulaire, N.M.P., Starbuck, E.S., Houston, R.M. & McPherson, K. (1991). Reduction in total under-5 mortality in Western Nepal through community-based antimicrobial treatment of pneumonia. *The Lancet*. 338(8773): 993-997. DOI: http://dx.doi.org/10.1016/0140-6736(91)91847-N

[10] Walker, D.G. & Jan, S. (2005). How do we determine whether community health workers are cost-effective? Some core methodological issues. *Journal of Community Health*. 30(3):221–229. PMID: 15847247

[11] Pegurri, E., Fox-Rushby, J.A. & Damian, W. (2005). The effects and costs of expanding the coverage of immunization services in developing countries: a systematic literature review. *Vaccine*. 23(13):1624–1635. Retrieved from http://www.who.int/bulletin/volumes /82/9/689.pdf

Chapter VI has shown that low levels of education are strongly correlated with low rates of service utilization across the entire continuum of maternal care.[12] Lack of education presents the greatest obstacle to utilization in rural and remote areas, where levels of formal education are the lowest, adult illiteracy is extremely high, and where education was found to be the single greatest indirect cause of maternal mortality.[13] For these reasons, increases in education rates constitute the most important solution to the problem of limited service utilization.

It is imperative that the State makes rapid efforts to ensure general education even in the most remote regions. Special emphasis must be placed on Tibetan women's education in particular, for, with an adult illiteracy rate of over 59% (18% higher than that of Tibetan men), rural-living women are the most disadvantaged with regard to education. Female-focused intervention is particularly important as women's general education is statistically proven to have a greater influence on maternal mortality.[14]

It is also critically important to ensure widespread maternal and child health education in particular. The most effective way to achieve this goal is to integrate health education into the rural system of healthcare itself. A decentralized, CHW-based system of rural health provides both the framework and the human infrastructure for the dissemination of health education in sparsely populated areas. Achieving widespread health education would appear to be as simple as incorporating health education into home visits conducted by CHWs.

Antenatal care visits by CHWs provide the opportunity to educate pregnant women concerning proper maternal nutrition and safe levels of physical labour during the antenatal period, as well as early recognition of the "danger signs" of birth complication. For those women with access to institutional care, CHWs may encourage hospital delivery. For those without, CHWs may explain preventative maternal and neonatal care practices (such as prevention of obstetric haemorrhage, birth asphyxia, and newborn hypothermia and hypoglycaemia) and the importance of having clean deliveries. Antenatal care visits also provide the opportunity to develop the birth-preparedness plans and, where possible, the contingency plans (for emergency transportation, payment for medical services, etc.) that is proven to save lives.[15] Birth attendance provides CHWs the opportunity to impart information concerning proper maternal and newborn nutrition and safe levels of physical labour during the postpartum, as well as important newborn care

[12] See Chapter VI, Section C, "Level of Education"

[13] Liang, J., Dai, L., Zhu, J., Li, X., Zeng, W., Wang, H., Li, Q. et al. (2011). Preventable maternal mortality: geographic/rural-urban differences and associated factors from the population-based maternal mortality surveillance system in China. *BMC Public Health*. 11: 6. Retrieved from http://www.biomedcentral.com/1471-2458/11/243

[14] *Id*.

[15] Dickerson, T., Simonsen, E. & Samen, A. (2010). Pregnancy and village outreach Tibet: a descriptive report of a community and home-based maternal-newborn outreach program in rural Tibet. *The Journal of Perinatal & Neonatal Nursing*. 24(2): 116-118; Moran, A.C., Sangli, G., Dineen, R., Rawlins, B., Yameogo, M. & Baya, B. (2006). Birth preparedness for maternal health: findings from Koupe la District, Burkina Faso. *Journal of Health, Population, and Nutrition*. 24(4): 489–497; Skinnner, J. & Rathavy T. (2009). Design and evaluation of a community participatory birth preparedness project in Cambodia. *Midwifery*. 25(6): 738–743.

practices, such as the early initiation of breastfeeding and newborn "danger signs." Finally, postnatal care visits give CHWs the chance to continue women's education concerning postnatal maternal care and newborn care.[16]

Health education is a natural compliment to the direct healthcare provided by CHWs during home visits. Through antenatal, intrapartum, and postnatal care delivered by CHWs, women and children receive direct, skilled healthcare; through health education, women receive the knowledge essential to maintaining their own and their children's wellbeing when CHWs are not present. By providing health education in this way, even remote-living women with poor general education would understand the importance of proper maternal and child care practices, as well as the importance of seeking skilled healthcare. Such an understanding is a prerequisite to service utilization and is one key to increasing service usage rates.

Raising Awareness

Socio-cultural beliefs and gender inequities within the Tibetan community are a second significant barrier to health services utilization. Socio-cultural belief has a tangible impact on utilization rates, where perceptions of purity, vulnerability, and personal responsibility regarding pregnancy and childbirth often act as disincentives to service utilization.[17] Gender inequity also notably limits utilization rates, where divisions of power and labour within the family unit often favour men and limit women's agency in health-related decision-making.[18]

One important strategy for reducing the impact such norms have on health service utilization is community-based awareness-raising of maternal and child health issues. Awareness raising often occurs in the form of periodic community meetings or dialogues, facilitated by trained CHWs. Such meetings sometimes address social, cultural, and religious norms and their impact on maternal and child health directly, however they need not do so. By conveying the importance of maternal and child health, exploring obstacles to care, and disseminating health education, community-based programs can have a beneficial impact without directly challenging the most deeply-rooted socio-cultural norms. Simply by bringing the subject into the public awareness, community-based programming can diminish norm-based obstacles to service utilization.

Awareness-raising initiatives have been proven highly effective in traditional cultures in mountainous, sparsely populated cultures throughout the world. In Ethiopia, intergenerational community dialogues decreased harmful traditional practices, significantly improved family planning knowledge, and improved contraceptive prevalence rate by 31%.[19] In Indonesia, facilitated community meetings led to increases

[16] Dickerson, Simonsen & Samen, *supra* note 15.
[17] See Chapter VI, Section C, "Minority Ethnicity and Cultural Belief"
[18] See Chapter VI, Section C, "Gender"
[19] Erulkar A.S. & Muthengi, E. (2009). Evaluation of Berhane Hewan: a program to

in skilled birth attendance by 18%, a consequent 33% reduction in infant mortality, and 85% compliance with micronutrient supplementation by pregnant women.[20] In Bolivia, facilitated women's group sessions coincided with a 63% decrease in perinatal mortality.[21]Given the success of awareness-raising programs across many cultures, it would appear that they have great potential to reduce social, cultural, and religious barriers to service utilization in Tibet. Furthermore, they provide an important platform for conducting maternal and child health education at the broader community level. It should be noted however that in the most remote and sparsely populated regions of Tibet, where individual family residences are spread far apart, community-based awareness-raising techniques will likely not be feasible.

Community awareness raising must be formulated and implemented with the utmost sensitivity, so as to do the least damage to communities' broader socio-cultural and religious contexts. Because CHWs are recruited from the communities in which they serve, they have an intimate understanding of the local socio-cultural and religious environments, and are in the best position to create and implement sensitive, effective awareness-raising efforts. Furthermore, community members will likely be more receptive to awareness programming conducted by local CHWs.

Raising awareness should not be the responsibility of CHWs alone, however. Research shows that most community and religious leaders are open to discussing changes in local behaviour and values that increase respect and support for maternal and child health. In Pakistan for example, the Pakistan Initiative for Mothers and Newborns (PAIMAN) worked successfully with religious leaders (*ulamas*) to increase community awareness of maternal and child health issues and to promote pro-health changes in men's behaviour.[22] The involvement of religious leaders may be particularly effective in Tibet, where a number of socio-religious beliefs act as considerable disincentives to service utilization, where the influence of local religious leaders is significant, and where practitioners of traditional Tibetan Buddhist healing systems are trusted sources of health information.[23]

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delay child marriage in rural Ethiopia. *International Perspectives on Sexual and Reproductive Health*. 35: 6–14; Natoli, L., Renzaho, A.M.N. & Rinaudo, T. (2008). Reducing harmful traditional practices in Adjibar, Ethiopia: lessons learned from the Adjibar Safe Motherhood Project. *Contemporary Nursing*. 29: 110–119.

[20]Shankar, A.V., Asrilla, Z., Kadha, J.K., Sebayang, S., Apriatni, M., et al. (2009).Programmatic effects of a large-scale multiple-micronutrient supplementation trial in Indonesia: using community facilitators as intermediaries for behavior change. *Food Nutr Bull*. 30: S207–S214.

[21] O'Rourke, K., Howard-Grabman, L. & Seoane, G. (1998) Impact of community organization of women on perinatal outcomes in rural Bolivia. *Revista Panamericana de Salud Publica*. 3: 9–14.

[22] Greene, M.E. & Ostrowski, C. (2009-2011). Delivering solutions: advancing dialogue to improve maternal health. Advancing Dialogue on Maternal Health Series. Woodrow Wilson International Center for Scholars. 3, 22. Retrieved from http://www.wilsoncenter.org/sites/default/files/Deliverying%20Solutions%20for%20Maternal%20Health%20Report.pdf

[23] Scrempf, M. (2010). Between mantra and syringe: Healing and health-seeking behaviour in contemporary Amdo. In V. Adams, M. Schrempf, and S.R. Craig (Eds.), *Medicine between science and religion: Explorations on Tibetan grounds*. 177-178. New York: Berghahn Books.

It is also important to note that men, especially husbands, have an important role to play in both health education and awareness-raising efforts. Not only do husbands' level of education have a statistically significant effect on mortality,[24] but multiple community awareness-raising efforts (in mountainous and sparsely-populated regions of Ethiopia for example,) have found that male involvement is a critical component of positive change.[25] For this reason, it is imperative that both home visits and awareness-raising programs conducted by CHWs include male populations.

Acceptability is Usability

The last serious obstacles to health services utilization stem from the healthcare system itself. Utilization rates are diminished by a number of factors that make accessible healthcare services culturally unacceptable to Tibetan populations. The lack of female, Tibetan, and Tibetan-speaking healthcare providers, the insensitive and sometimes discriminatory attitudes of providers, the lack of privacy in healthcare facilities, and a number of modern maternal care practices each act as considerable disincentives to utilization.[26]

For this reason, the cultural acceptability of healthcare must be a prime consideration of policy-makers both in improving the existing centralized clinical system of healthcare, and in developing a CHW-based system of rural health. Ensuring the availability of female Tibetan healthcare providers will do much to increase Tibetan women's utilization of both facility-based services and services provided by CHWs. Ensuring privacy in healthcare facilities is eminently achievable, and will yield outsized increases in Tibetan women's comfort, with beneficial results for the utilization of facility-based services. Training healthcare providers to adopt professional attitudes, to provide sensitive, responsive care, and to respect the cultural differences of patients will make Tibetan women feel more comfortable in healthcare facilities, with beneficial results for utilization rates. The benefits of sensitivity training is proven: in sparsely-populated, mountainous regions of Tajikistan and Kyrgyzstan for example, such training decreased harmful provider practices by 90% and increased patient satisfaction significantly.[27] Finally, it is important to ensure that prescriptions and medicinesare available in the Tibetan language, in order to further decrease language barriers to healthcare.

Improving Service Quality

[24] Ip, W.Y., Chan, M.Y., Chan, D.S. & Chan, C.W. (2011). Knowledge of and attitude to contraception among migrant woman workers in mainlandChina. *Journal of Clinical Nursing*. 20.
[25] Natoli, Renzaho, Rinaudo, *supra* note 19.
[26] See Chapter VI, Section C, "Minority Ethnicity and Cultural Belief"
[27] de Haan, O. (2010) From patient to client. *Patient Education & Counseling*. 81: 442–447; de Haan, O., Boerma, W., Wiegers, T., Askerov, A., Popovitskaya, T. et al. (2010) Safe Motherhood: preparedness for birth in rural Kyrgyzstan and Tajikistan - Report. Nederlands: Nederlands School of Public and Occupational Health, Reproductive Health Alliance Kyrgyzstan, Tajik Family Planning Alliance.

The poor quality of maternal and child health services is an on-going obstacle to the achievement of positive health outcomes in both urban and rural regions of Tibet. However, issues of service quality are especially prevalent in rural and remote areas, where funding for the healthcare system is severely limited. As access to care and utilization rates increase, the quality of health services will become increasingly important.[28]

The poor quality of services must be addressed in two primary ways. First, government must ensure that healthcare providers at rural THCs and county hospitals have adequate levels of training for the provision of basic (in the case of THCs) and comprehensive (in the case of county hospitals) emergency obstetric and neonatal care. This means that existing rural providers must receive additional professional training, and that the requirements for the certification of new rural healthcare personnel must be made more rigorous. Furthermore, interregional and intraregional disparities in the requirements for healthcare provider certification must be eliminated. As long as providers in different regions hold the same certification but differing levels of actual training, disparities in regional health outcomes are bound to persist.

Second, program management and supervision must be both expanded and improved, especially in the rural areas where it is currently most deficient. By default, inadequate supervision permits the continuation of poor service quality and precludes improvement in maternal and child health. Finally, it should be noted that improvements in service quality have a beneficial impact beyond the provision of better direct care. Recent research, including some from ethnic minority populations in rural Sichuan Province,[29] suggests that service quality is linked to utilization rates – in essence, that poor service quality is itself a barrier to patient care-seeking.[30] Therefore, as service quality improves, rates of utilization should also increase.

Implications for Patient Self-Care

Taking the three steps discussed in this section will do much to reduce the home-based patient self-treatment that causes so many preventable deaths. As access to healthcare increases and utilization rates rise, the prevalence of self-treatment for maternal and child health issues will decrease. This is the result of the inverse relationship between service utilization and self-care: the more patients receive healthcare from skilled providers (either CHWs in the home context or personnel at healthcare facilities), the less they are required to address illness and injury through self-treatment.

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[28] See Chapter VI, Section B, "Conclusions"

[29] Harris, A., Zhou, Y., Liao, H., Barclay, L., Zeng, W. & Gao, Y. (2010). Challenges to maternal health care utilization among ethnic minority women in a resource-poor region of Sichuan Province, China.*Health Policy and Planning*. 25: 311-318. DOI:10.1093/heapol/czp062

[30] Peters, David H., Garg, A., Bloom, G., Walker, D.G., Brieger, W.R. & Rahman, M.H. (2008). Poverty and access to health care in developing countries. *Annals of the New York Academy of Sciences*. 1136(1): 161-171. Retrieved from onlinelibrary.wiley.com/store/10.1196/annals.1425.011/asset/annals.1425.011.pdf;jsessionid=DD5130BC5E429333FFEC66B3CD7066E4.f03t03?v=1&t=i4ter9vu&s=58392b7e20b31cc662d9f8278deb992acb913c9d

The prevalence of risk-creating self-treatment in the home context should also be significantly decreased by the proliferation of information and education concerning maternal and child health. As an understanding of good maternal and childcare spreads via general education, awareness-raising efforts, and interaction with care providers, women and families will become more knowledgeable concerning safe self-treatment. For those few women who are still unable to access direct healthcare, their home-based self-care practices should greatly improve, thereby decreasing unnecessary risk and reducing preventable morbidity and mortality.

B. Piloting Success: Three Models for Improvement from Tibet

One reason for optimism concerning maternal and child health in Tibet is that a number of successful interventions have already been conducted, while others continue successfully to this day. Interventions in maternal and child health in Tibet have been few in number and mostly very limited in scope - increasingly so since the State tightened control over the TAR and expelled most foreign NGOs in the aftermath of the 2008 uprising.[31] However, three programs have yielded very promising results. For their proven efficacy, and for the way in which they incorporate the fundamentals of improvement discussed in the preceding section, they serve as models for improving maternal and child health in Tibet.

The first two programs are decentralized, community health worker-based systems of rural health services delivery, both begun by American non-profit organizations. They are Pregnancy and Village Outreach Tibet (PAVOT), begun in 2004 in the TAR's Lhasa Prefecture, and the Surmang Foundation Community Health Worker Program, begun in 2006 in Yushu Tibetan Autonomous Prefecture in southwestern Qinghai Province. The third program focuses on improving the existing system of centralized clinical healthcare – it is the National Safe Motherhood Initiative, begun in 2001 by the PRC's Ministry of Health and the United Nations Children's Fund.

Pregnancy and Village Outreach Tibet (PAVOT)

The PAVOT program was initiated in rural Medrogongkar County of the TAR's Lhasa Prefecture in 2004 by One HEART, an American non-profit group committed to improving maternal and child health in vulnerable rural communities around the globe. One HEART's work in the area began in 2003 and consisted primarily of conducting skilled birth training for rural healthcare providers. As home birth in the region surpassed 90% at the time, One HEART quickly found that such methods were unlikely to significantly reduce mortality. One year later therefore, One HEART introduced a

[31]U.S. Department of State. (2012). *Country reports on human rights practices for 2009*. Vol. 1., S. Prt. 112-40. 883. Washington, D.C.: Government Printing Office. Retrieved from https://books.google.co.in/books?id=7NMXABwIjyAC&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false

decentralized program of low-cost rural health services delivery, which focused on improving outcomes via CHW outreach to rural homes.[32]

PAVOT is a "trainer-of-trainers" program, in which master trainers instruct outreach providers, who in turn deliver healthcare to rural-living women who are at risk for unattended home birth, via a series of visits to patients' homes. Master trainers conduct training sessions every six to eight weeks, in which outreach providers are taught how to provide three critical interventions: health education, hands-on skills training, and resource distribution. Master trainers are native Tibetans, fluent in Tibetan and Chinese, and are full time, salaried employees. Outreach providers are native Tibetan volunteers, both healthcare workers and laypersons, who are fluent in the local Tibetan dialect. Because they are similar in many respects to the patients they treat and have intimate understanding of local belief and custom, they are uniquely qualified to perform such work.[33]

The core of the program is a series of home visits that ensure healthcare coverage along the entire continuum of maternal and neonatal care. Education is the first essential component of such visits; it includes the importance of institutional healthcare, early warning signs of birth complication and newborn illness, appropriate maternal and newborn nutrition, the benefits of developing birth and contingency plans, the importance of skilled birth attendance, clean and safe home delivery, safe umbilical cord management, and methods for preventing obstetric haemorrhage, birth asphyxia, and newborn hypothermia.

The second component of provider visits is hands-on skills training, in which women are taught methods for illness prevention and newborn care, such as abdominal uterine massage for the prevention of haemorrhage, and newborn resuscitation techniques. Though outreach providers did not initially provide skilled attendance during delivery itself, by 2006 One HEART had begun training skilled birth attendants (SBA) to provide this service.

The third component of provider visits is the distribution of materials to support maternal and newborn health. Resources include micronutrient supplements and a "safe and clean" birth kit, which consists of disposable gloves for those assisting in delivery, bar soap, drugs for the prevention of haemorrhage, a clean plastic sheet on which to deliver, a sterile razor blade and ties for umbilical cord care, and a thermal cap and blanket for the newborn.[34]

The PAVOT program yielded extremely positive results. In 2004, maternal and newborn death decreased 67% and 33% respectively in the target county. In 2006, skilled birth attendance increased 28 percentage points to a total of 66%, and the rate of

[32]Dickerson, T., Simonsen, E. & Samen, A. (2010). Pregnancy and village outreach Tibet: a descriptive report of a community and home-based maternal-newborn outreach program in rural Tibet. *The Journal of Perinatal & Neonatal Nursing*. 24(2): 114-115.
[33]*Id*., at 114-116.
[34]*Id*., at 115-118.

2, 3+, and 5+ perinatal care visits reached 97%, 75%, and 50% respectively.[35] In 2008, *no maternal deaths occurred* and the newborn death rate dropped from 10% to 3%.[36] The program was so successful that in 2006, the Health Bureau of Lhasa Prefecture requested that One HEART expand its operations to a second county. In 2008, when political conditions forced the American staff to leave Tibet, PAVOT's Tibetan team successfully took over management of the program, and continued its work as a registered non-profit - the Lhasa Prefecture Maternal and Child Health Association (LPMCHA). In 2012, the Health Bureau chose to contract LPMCHA's services in the Shigatse area. The decision required a major scaling-up in operations and was an indicator of the program's success.[37] Today, One Heart's model is proving highly effective in its programs in Nepal and Mexico – areas facing challenges similar to those of rural Tibet.[38] It is evident that the PAVOT approach is cost effective, highly impact effective, sustainable, and not only replicable, but subject to major expansion.

One Heart and LPMCHA attribute their success to the PAVOT model and the "Network of Safety" it creates. This network provides care from pregnancy to the neonatal period, and from the rural home context to township health centres. The Network of Safety/PAVOT model incorporates almost every fundamental component of improvement discussed in the preceding section. By providing trained female Tibetan outreach providers and skilled birth attendants, it ensures much greater access to care in rural and remote areas and ensures basic emergency obstetric care - the single most important service for preventing mortality. By highlighting health education and providing hands-on skills training, the PAVOT model encourages health services utilization for women with access to institutional care, and empowers those without to protect themselves and their child with proven preventive care practices. Finally, by providing further training for facility-based healthcare providers, the program addresses the need for higher quality service within the existing centralized clinical system.[39]

For its patient-centric system of rural health services delivery, it's improvement of access, utilization, and quality of healthcare, and it's efficacy in achieving positive health outcomes, PAVOT constitutes an exemplary model of intervention. The PAVOT model can and should serve as a prototype for future maternal and child health intervention in Tibet.

Surmang Foundation Community Health Worker Program

The Surmang Foundation is an American non-profit currently operating in Surmang Township, a sparsely populated rural region of Yushu Tibetan Autonomous

[35]*One H.E.A.R.T. Program Fact Sheet*. Dining for Women. Retrieved from http://diningforwomen.org/wp-content/uploads/2014/01/oneheart4-pfs.pdf
[36]*One HEART World-Wide Annual Report 2012*. 6. Retrieved from http://www.oneheartworld-wide.org/images/uploads/ 2012_Annual_Report_12_27.1_.pdf
[37]*One HEART World-Wide 2013 Annual Report*. Retrieved from http://www.oneheartworld-wide.org/docs/uploads/2013_Annual_Report-digital.pdf
[38]*Id*.
[39]*Id*.

Prefecture in Qinghai Province. Surmang Foundation began its work in the region in the early 1990s, bringing volunteer foreign doctors to the area to provide free healthcare. From 1996 through 2005, free healthcare services continued to be offered at a health clinic constructed by the Foundation.[40] In 2004, its study of public health in the region found that geographic, financial, educational, and cultural barriers prevented access to and utilization of healthcare for local women. The study found that as a result, maternal and child health conditions were extremely poor. The institutional delivery rate was under 1%, risk-creating self-treatment practices were common, and (though MMR for the region was not calculated), the occurrence of three maternal deaths out of 103 live births within a nineteen month period suggests that the MMR was far higher than any reported in the PRC.[41]

In order to address the poor state of maternal health, the Surmang Foundation developed a community-health worker program of rural health services delivery in 2006. The Surmang model focuses on training local CHWs who provide direct antenatal, intrapartum, postnatal, and neonatal care services as well as health education to surrounding communities via a series of home visits. CHWs are female Tibetans laypersons that are recruited from the communities they serve and are paid per service delivered. CHW training occurs quarterly, and focuses on considerations of hygiene and basic emergency obstetric and neonatal care (EmONC). CHW's primarily goals are to identify women at high risk for birth complication, provide referrals to healthcare facilities where feasible, facilitate safe home deliveries, and provide postnatal and neonatal care. They also provide health education focusing on hygiene, maternal nutrition, and the early warning signs of birth complication and neonatal illness. The Surmang model also focuses on training healthcare providers in the Public Health Bureau's Village Health Worker system, in order to improve access to EmONC and to improve service quality.[42]

The Surmang Foundation's CHW program has been highly successful. Healthcare has been made far more accessible and utilizable – in 2009, the Surmang clinic treated ten times more patients than did township hospitals in the local area on average. The program's services are also patient-focused and of good quality, as evidenced by the fact that per-patient costs were roughly 14% of those of government health centres, and that patients reported much higher satisfaction with services.[43] Before the program was initiated in 2006, the region had extremely high rates of maternal death; by 2011, maternal mortality had been reduced to zero.[44] At 9.8%, infant mortality occurring at the Surmang clinic was also notably lower than that of the IMR at township

[40] Surmang Foundation. *Surmang Clinic* (2014). Retrieved from www.surmang.org/?page_id=134
[41] Wellhoner, M. et al. (2011). Maternal and child health in Yushu, Qinghai Province, China.*International Journal for Equity in Health*. 10: 42. 1, 6.
[42] Factor, D. (2011). *Community Health Worker Program Executive Summary and Annual Report*. Surmang Foundation. Retrieved from www.globalgiving.org/pfil/5500/2011_Executive_Summary_Surmang_CHW_Report_FINAL.pdf; Surmang Foundation, *supra* note 40.
[43] Surmang Foundation. *Basic Information* (2014). http://www.surmang.org/?page_id=129
[44] Surmang Foundation (2011). *Annual Report*. Retrieved from http://surmang.org/surmang/wp-content/uploads/2014/05/2011-Annual-Report%EF%BC%8Dsmall.pdf

health centres (16%).[45] The program has been so successful that in 2010, the Bureau of Health of Yushu Prefecture partnered with the Surmang Foundation in order to export its model of service delivery to four other government-run clinics.[46]

The Surmang Foundation attributes its success to ensuring community-based maternal and neonatal care, providing health education, and building the capacity of local government hospitals. Not only has this approach addressed the major underlying issues of access, utilization, and quality, but it has also proven its sustainability and potential for expansion. For these reasons, the Surmang CHW program constitutes an excellent model of effective maternal and child health intervention, and should serve as a guide for future intervention in Tibet.

National Safe Motherhood Initiative

The "Program to Reduce Maternal Mortality and Eliminate Neonatal Tetanus," also known as the National Safe Motherhood Initiative, is the PRC's largest, longest lasting, and best funded maternal and child health program to date. A joint effort of the PRC's Ministries of Health and Finance and the State Council Committee for Women and Children, it was first implemented in 2000. Its primary goal is to improve conditions in rural areas by strengthening and expanding the existing centralized clinical model of health services delivery.[47]

Programmatic intervention was conducted in 1,000 "priority" counties of the PRC; 378 were located in the "Western" group, which included the TAR and Gansu, Qinghai, Sichuan, and Yunnan Provinces, as well as seven other provinces. Though the program was meant to include only impoverished, underdeveloped, and rural counties with high MMRs, research has found that as few as 68% met these criteria.[48]

The program includes five interventions. First, the capacity of existing physical and human infrastructure was improved: with provincial level technical aid, township health centres and staff were trained and equipped to provide basic emergency obstetric care, and county level hospitals and staff were equipped and trained to provide comprehensive emergency obstetric care. Second, new capacities were introduced to the centralized system: emergency obstetric centres were established at the county level, and express referral networks for emergency obstetric cases (called "Green Channels") were developed. Third, efforts were made to expand access to hospital delivery: pregnant women were encouraged to deliver in hospitals, and the cost of delivery was waived,

[45] Surmang Foundation, *supra* note 43.
[46] Surmang Foundation, *supra* note 44.
[47] Liang, J., Li, X., Dai, L., Zeng, W., Li, Q., Li, M., Zhou, R. et al. (2012).The changes in maternal mortality in 1000 counties in mid-western China by a government-initiated intervention.*PLoS ONE*. 7(5). e37458. 2-3. DOI:10.1371/journal.pone.0037458
[48] *Id*.; Guo, Y., Feng, X., Shi, G., Wang, Y., Xu, L., Luo, H., Shen, J. et al. (2009). *An impact evaluation of the Safe Motherhood Program in China*.Global Development Network. Working Paper Series Paper No. 7. 4. Retrieved from http://www.gdn.int/html/workingpapers.php?mode=download&file=WP7-China-Motherhood_1c4.pdf

reduced, or reimbursed to poor patients. Fourth, health education concerning available services, the importance of institutional delivery, and maternal and neonatal care was conducted. Finally, supervision was strengthened at the county level via the introduction of annual inspections and assessments.[49] Therefore, unlike the PAVOT and Surmang programs, which strive to deliver healthcare via decentralized CHWs at the community level, the Safe Motherhood Program recommits to the PRC's existing model of centralized clinical service delivery at the township and county levels.

The program yielded very positive results. Between 1997 and 2007, the hospital delivery rate of the Western group of counties increased 36%, and MMR decreased by 59%. Maternal death from obstetric haemorrhage, pregnancy-induced hypertension, and amniotic fluid embolism - leading causes of maternal death in Tibet, decreased by 68%, 45%, and 78% respectively.[50] A second study of the program found that between 2001 and 2005, the hospital delivery rate increased by 55%, and MMR decreased by 35% in the Western group of counties.[51] A third study of the program found that from 1996-2006, modest investment in the program by county and central governments (318,000 yuan per county per year, or roughly $39,800),[52] yielded very positive outcomes, indicating that the program was not only impact-effective, but cost-effective as well.[53]

The greatest strength of the National Safe Motherhood Initiative is its focus on increasing hospital delivery rates.[54] Given that institutional delivery decreases the risks of birth and neonatal complications, makes basic emergency care services readily available, and is strongly negatively correlated with MMR, it is evident that encouraging hospital delivery is a highly effective strategy for combating mortality.[55] The program's impact on utilization rates of antenatal, postnatal, and neonatal care is less clear. Evaluations of the program report that increases in antenatal care utilization ranged from negligible to significant.[56] Insofar as the program addressed financial, educational, and awareness barriers to service access and utilization however, it improved the centralized system of health. Furthermore, though data concerning the program's effect on service quality is limited, the program clearly addresses some of the underlying causes of poor quality, such as poorly trained healthcare providers and inadequate supervision in rural health facilities.[57] Therefore, for its efficacy in reducing maternal mortality and the positive steps it takes in addressing issues of access, utilization, and quality, the Safe Motherhood Program constitutes a model for the improvement of the centralized clinical system of healthcare in Tibet.

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[49] Liang et. al., *supra* note 47, at 2-3.
[50] *Id*., at 4.
[51] Liu, X., Yan, H. & Wang, D. (2010). The evaluation of "Safe Motherhood" program on maternal care utilization in rural western China: a difference in difference approach. *BMC Public Health*. 10: 2-5. Retrieved from http://www.biomedcentral.com/1471-2458/10/566
[52] In 2006, the exchange rate of yuan to US dollars was roughly 8:1.
[53] Guo et. al., *supra* note 48, at 16-17.
[54] Liang et. al., *supra* note 47, at 6-7.
[55] Guo et. al., *supra* note 48 , at 15-16.
[56] *Id*., at 16-17; Liu, Yan & Wang, *supra* note 51, at 3.
[57] Liang et. al., *supra* note 47, at 6-7.

Learning from Effective Intervention

The PAVOT and Surmang programs reveal that a decentralized system of community health workers is highly effective in improving both maternal and child health in the remote rural communities left behind by the State's centralized clinical system of care. By providing home-based healthcare and education along the entire continuum of health, and by ensuring skilled birth attendance and basic emergency care services in particular, both programs were able to achieve drastic, rapid decreases in mortality. The programs prove that simple prevention and intervention, delivered at the appropriate time and in a location accessible to patients, can render outsized improvements in outcomes.

These two models demonstrate that by taking into consideration the structural determinants of poor health and addressing previously unrecognized patient needs, the accessibility and utilization of healthcare can be vastly improved. In each program, this was achieved via health education and the direct delivery of services by female, Tibetan healthcare workers. Finally, each program has shown that its decentralized, CHW-based model of rural healthcare is cost-effective, sustainable, and subject to scaling-up.

The National Safe Motherhood Program contributes two more important insights concerning the improvement of conditions in Tibet. First, the success of the program demonstrates the value of the State's centralized clinical model of health services delivery, and its efficacy in providing maternal and child care, *when it is properly supported*. The program has shown that, given appropriate financial support, the centralized clinical model can achieve significant reductions in mortality, through the capacity building of health infrastructure, personnel, and services at the township and county levels. The program also makes clear the importance of strong support from provincial and central government, specifically with regard to policy, technical aid, health system management, and monitoring/assessment. Second, the program's success further proves that efforts to decrease barriers to access and utilization from the supply-side, especially via financial stimulants for consumers, will garner improvement in outcomes.

Finally, the program underscores the fact that widespread, significant improvement to the standing system of healthcare need not be prohibitively expensive. According to measures of the program's costs estimated in recent research, the cost of extending the intervention to every county in the Tibet Autonomous Region would have accounted for less than one-fifth of one percent of the TAR's total government expenditure on health care in 2012.[58]

[58] Guo et al., *supra* note 48, at 4; National Bureau of Statistics of China. (2013). *National Statistical Yearbook*. Chapters 1-1, 9-6.

C. A Vision the Path Forward

In determining the biomedical and structural causes of poor health, exploring the weaknesses of the current healthcare system, and drawing lessons on how to improve conditions from successful examples in the international, Chinese, and Tibetan contexts, a vision of the path forward for maternal and child health in Tibet has begun to emerge. Though successful intervention will require research and analysis beyond that which is represented in this report, the essential components of the path to good health and health equity for Tibet's women and children are clear.

First and foremost, the government of the People's Republic of China must recommit itself to taking the lead role in improving maternal and child health in Tibet. Considering that conditions are worst among the rural, impoverished, and poorly educated populations that are least empowered to overcome the barriers to healthcare, provincial and central government must no longer shun responsibility for ensuring the Tibetan people's healthcare. Without focused, appropriate, and sustained government support in the realms of programmatic intervention, policy, finance, and monitoring and assessment, extremely poor maternal and child health will continue to be a fact of life in Tibetan communities.

Furthermore, central and regional government must recommit to achieving genuine health equity in maternal and child health in Tibet. Though the PRC's successes in improving conditions at the national level merit commendation, such achievements mean little for the Tibetan communities that bear such a disproportionate burden of morbidity and mortality. As long as rural, impoverished, and ethnic minority communities continue to be excluded from the system of healthcare, the PRC's maternal and child health landscape will remain pockmarked with poor conditions.

To these ends, two broad interventions require wilful government implementation. First, the capacity of the contemporary health system's centralized model of service delivery must be strengthened, in a manner akin to that of the National Safe Motherhood Program. Capacity building should be focused at the township and county levels, especially those of Rural Types IV, III and II administrative regions, and strengthen physical and human infrastructure, as well as services. Improvements to physical infrastructure should include: the provision of township health centres with equipment necessary to provide basic emergency obstetric and neonatal care, and the provision of county hospitals with comprehensive emergency obstetric and neonatal care equipment. Special emergency obstetric centres should also be established in each county, and ensure the provision of 24-hour service.

Improvements to human infrastructure should include: the employment of adequate numbers of obstetric and neonatal doctors by THCs, county hospitals, and emergency obstetric centres, and the training of existing doctors such that they are capable of providing high-quality obstetric and neonatal care. Efforts should be made to ensure that female, Tibetan care providers are available at all care facilities in Tibetan

regions. Especially in remote and rural areas, greater supervision of healthcare personnel must be established. Finally, the provider certification requirements in Western and rural regions should be increased to match those of Eastern and urban regions.

Improvements to health services should include: the development and maintenance of express transportation and referral networks for emergency cases (similar to the Safe Motherhood Program's "Green Channels"), and the monitoring and assessment of service quality. It is essential that maternal and child health education be made a priority service of every Bureau of Public Health at the township and county level. Finally, it is of the utmost importance that maternal and child health services be made affordable for all patients.

As the National Safe Motherhood Program has indicated, such measures will serve to increase access and utilization to services, as well as to improve health outcomes *within health facilities existing catchment areas*.[59] It is more than evident however that such measures alone will be severely insufficient to extend health services coverage to the remote and rural areas outside health facilities' catchments. Beyond this very limited zone of coverage, such systematic improvements will be unable to overcome the educational, cultural, and especially geographic barriers to access and utilization of healthcare. As long as no alternatives to the centralized clinical system of service delivery exist in these areas, outcomes and equity will continue to be vulnerable to "geographic decay" – the degradation of access, utilization, and outcomes that intensifies as distance from facilities increases. In other terms, the centralized system's efforts to improve conditions will garner increasingly marginal results beyond facilities' catchment areas.

It is therefore imperative that a strong, community health worker-based system of decentralized rural service delivery be developed, implemented, and maintained in the most rural and remote areas (administrative regions Rural Types IV, III, and II). This system should be modelled after the highly successful PAVOT and Surmang CHW programs, and prioritize the delivery of direct healthcare, health education and hands-on skills training of patients, and resource distribution via a series of home visits.

Patient visits by CHWs should cover as much of the continuum of maternal and neonatal care as possible, with an emphasis on antenatal care and direct intrapartum care (i.e. birth attendance). Health education and hands-on skills-training conducted by CHWs should cover appropriate nutrition, early warning signs of complications and illness, methods of preventing complication (especially haemorrhage, birth asphyxia, hypothermia, and sepsis), birth preparedness and contingency planning, the importance of delivery that is safe, clean, and attended by a skilled care provider, and newborn care. Resources distributed by CHWs should include health education tools, micronutrient supplements for mothers, and for those women at risk of giving birth in the absence of a CHW, the "safe and clean" birth kits detailed in Section B's description of the PAVOT program.

[59] Here, the term "catchment area" delineates the geographic area for which health facilities provide actual health services coverage - not the area for which it is responsible.

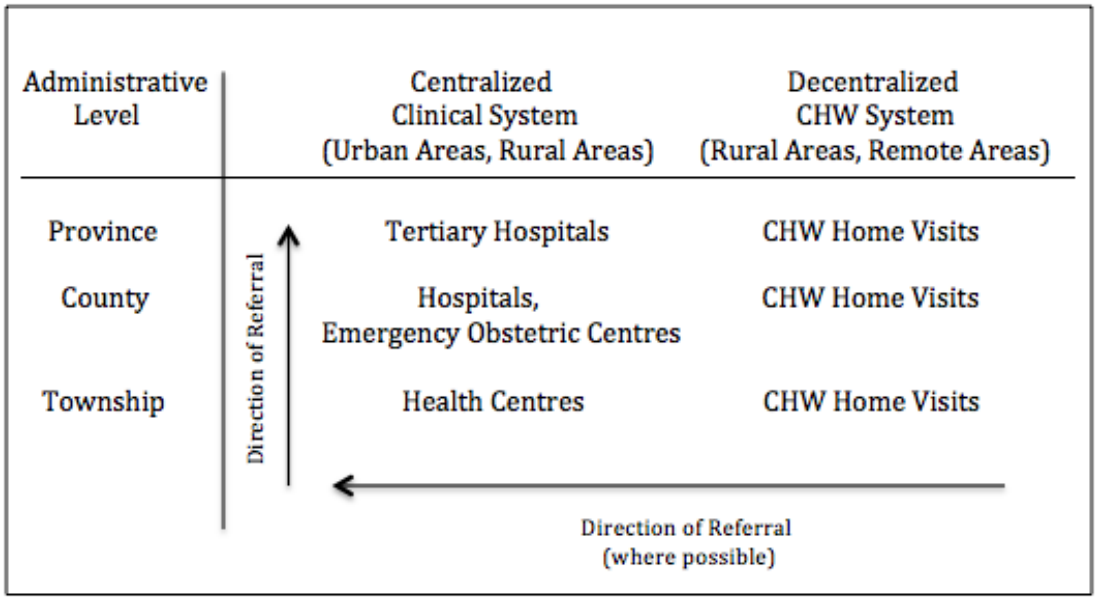
Two further conditions of the CHW system of decentralized service delivery are essential to its success. First, it is critical that community health workers be Tibetan women, recruited and operating from the rural regions in which they serve. Not only will this increase utilization rates among Tibetan populations for which trust and privacy are crucial during pregnancy and childbirth, but it will also sustain CHW's investment in their work. Second, ensuring the affordability of CHW services will be of the utmost importance, as such services will be rendered in those regions where families are most impoverished.

The success of the PAVOT and Surmang programs suggest that developing this CHW-based system of decentralized service delivery will significantly increase service coverage, and consequently reduce both maternal and child mortality dramatically. Such a system will provide the preventative care, early detection of birth and neonatal complications, and basic emergency obstetric and neonatal care services that are so critical to saving lives.

These two essential interventions – the strengthening of the existing centralized clinical system and the development of a decentralized, CHW-based system, are natural compliments to one another. Whereas strengthening the existing clinical system will improve service coverage within facilities' catchment areas, the development of a CHW system will ensure healthcare for populations outside of them. In other terms, strengthening the existing system will bring as many patients as possible to facilities for care, while developing a CHW system will take health services to those for whom institutionalized care remains inaccessible.

The centralized and decentralized systems should not operate in isolation from one another; to the contrary, a number of points of contact and even a degree of integration are important. First, although the delivery of healthcare services in the CHW system is decentralized, the logic of efficient resource allocation suggests that CHWs themselves should receive training and professional development, resources, and operational support from management at the township and county levels. Second, it is critical that referral networks link the decentralized and centralized systems wherever possible; this will allow CHWs to refer rural patients for institutional care when it is necessary, and when patients' financial and transportation conditions permit such action.

Figure 4. A Dual Model of Health Services Delivery



Implementation of these two interventions will increase patient access to care, patient utilization of services, and the quality of service in urban, rural, and even the most remote areas. As the capacity and efficacy of the centralized clinical system is improved, and as a system of CHWs extends coverage to those areas where none existed before, morbidity and mortality will decrease dramatically.

IX. Conclusion

As the deadline of the Millennium Development Goals initiative approaches, the People's Republic of China's progress in improving maternal and child health (MDG Goals 4 and 5) is increasingly hailed as a major success, and an exemplar of effective intervention. International and State media and United Nations reviews of the PRC's progress paint a picture of maternal and child health transformed: under-five child mortality driven down to 13.2%, maternal mortality decreased 24.5 per 100,000, and substantive increases in rates of systematic maternal healthcare - all since 1990.[1]

Yet the daily reality for the women and children of Tibet is far different from the glowing picture of maternal and child health painted by such aggregated national statistics. In Tibetan regions of the PRC, maternal mortality is over eight times higher than average. Infant mortality is almost three times higher than average, and life expectancy is 8.5 years lower. Tibetan populations – especially the millions in rural and remote areas, bear a vastly disproportionate burden of the PRC's morbidity and mortality. Maternal and child health conditions in Tibet share little with conditions in the PRC on average.[2]

The crisis in maternal and child health in Tibet is in large part the result of a failing system of rural healthcare, which is compounded by poor risk management on the part of provincial and central government. Risk assessment reveals that Tibetan communities are at some of the highest risk in the nation for morbidity and mortality – the result of disproportionate poverty and poor education, geographic isolation from healthcare facilities, and cultural disincentives to health services utilization in Tibetan communities. However, provincial and central governments have refused to acknowledge and address conditions in the highly at-risk communities. The centralized, clinical nature of health services delivery makes overcoming financial, geographic, educational, and cultural barriers to care the sole responsibility of those very communities that are least empowered to do so.

Even where healthcare is accessible to Tibetan populations, the decentralization of healthcare financing has undercut the operational capacity and quality of service in rural areas, compounding Tibetans' risk further. The most direct indication of government's refusal to address these conditions however is the severe underfinancing of the healthcare system as a whole in the TAR. Though health conditions in the TAR are worst in the nation by a wide margin, the TAR's health system spending in 2012 (as a

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[1]United Nations System in China, Ministry of Foreign Affairs of the People's Republic of China. (2013). *China's progress towards the millennium development goals: 2013 report*. 27-35. Retrieved from http://www.cn.undp.org/content/

[2]China National Population and Family Planning Commission. (2010). *China population and family planning yearbook*.Maternal Health Care by Region (continued), 509, 513; National Bureau of Statistics of China. (1990, 2000, 2010). *Statistical yearbooks of Gansu Province, Qinghai Province, Sichuan Province, Yunnan Province, and the Tibet Autonomous Region* (1990), (2000), (2010).

function of total regional public expenditure) was the smallest of any region in the nation – a full 39% below average.[3]

The result of government and health system neglect of at-risk rural Tibetan communities is extremely poor maternal and child health in these areas. The consequences have impacted both women and children, and have not been limited to widespread mortality alone. Severe malnutrition affects between three and four out of every 100 children in the TAR, and systematic child healthcare, at 41.2%, is exceptionally low.[4] Systematic maternal healthcare is even worse, at only 33.3%, and birth attendance by a skilled care provider is estimated to be well below 54.5%.[5]

Despite the poor state of maternal and child health in Tibet, there are reasons for cautious optimism concerning the potential for improvement. First, the successes of the PAVOT, Surmang, and Safe Motherhood programs in Tibet prove that health outcomes and health equity can be drastically and rapidly improved, given a proper understanding of the underlying causes of poor health, an appropriate model for intervention, and sufficient resources to support its implementation. Insofar as these programs provide a blueprint of effective intervention, the knowledge and strategies for achieving meaningful improvement already exist. Furthermore, each of these three programs has shown that intervention in maternal and child health is highly cost-effective, as well as sustainable in the long term.

Second, from the biomedical perspective, the problem of poor maternal and child health in rural areas is readily solvable. The PAVOT and Surmang community health worker models have proven that simple strategies, such as health education and basic emergency obstetric/neonatal care delivered via skilled birth attendants, substantially improve health outcomes. Compared to areas with more developed healthcare systems, where the fewer deaths are more complicated and more difficult to prevent, the potential for substantial, rapid improvement in rural areas is great. This potential is reflected in a recent finding that 86% of maternal death in the PRC is preventable.[6]

For these reasons, the poor state of maternal and child health in Tibet is no longer the problem of development that it was when the Millennium Development Goals initiative began in 2000. Rather, given the pervasiveness of poor health in Tibetan communities in a nation where dramatic improvement has already been achieved at the national level, the poor state of maternal and child health is today a matter of social

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[3]Bureau of Statistics of the People's Republic of China. (2013). *2013 China national statistical yearbook*.Chapter 9-6.
[4]China Population and Family Planning Yearbook, *supra* note 2, at 513.
[5]*Id*., at 508; See Chapter V, Section A, "Indicator 7: Skilled Attendance at Birth"
[6] Liang, J., Dai, L., Zhu, J., Li, X., Zeng, W., Wang, H., Li, Q. et al. (2011). Preventable maternal mortality: geographic/rural-urban differences and associated factors from the population-based maternal mortality surveillance system in China. *BMC Public Health*. 11: 243. Retrieved from http://www.biomedcentral.com/1471-2458/11/243

justice.[7]Given that the measures required to improve conditions are readily achievable, cost and impact effective, and sustainable, there can be no legitimate justification for continued government inaction concerning maternal and child health in Tibet. The methods of effective intervention await only the political will by which they can be broadly implemented.

The consequences of further government neglect will occur at the expense of the Tibetan people. Ultimately, though the cost of poor health is measured in statistics, it is paid in the lives lost by the mothers and children of Tibet. It is this terrible human cost that demands immediate, widespread, and meaningful action.

[7] UNAIDS, UNICEF, UNFPA, WHO. (2012). *Health in the Post-2015 UN development agenda*. UN System Task Team on the Post-2015 Development Agenda. Retrieved fromhttp://www.un.org/millenniumgoals/pdf/ Think%20Pieces/8_health.pdf

Policy Recommendations

To the Government of the People's Republic of China:

1. Reaffirm the PRC's commitment to protecting maternal and child health in Tibet, and to achieving health equity in both the interregional and intraregional contexts;

2. Protect and fulfil Tibetans' human right to health as it is protected in the ICESCR, CEDAW, CRC, and the Constitution of the PRC;

3. Reduce maternal and child mortality and severe child malnutrition to rates less than or equal to current national averages;

4. Ensure that all women and children have access to basic emergency obstetric and neonatal care;

5. Strengthen the capacity of the standing centralized clinical system of health services delivery at the township and county levels. Focus capacity-building efforts on upgrades in physical healthcare infrastructure, professional development of obstetric and neonatal care providers, and the provision of culturally-acceptable care;

6. Introduce a decentralized, community health-worker based system of maternal and child health in rural and remote areas of Tibet, particularly in Rural Areas Types II, III, and IV. Prioritize visits by CHWs along the entire spectrum of care, as well as safe and clean home delivery, health education for mothers and families, and the raising of community awareness;

7. Empower rural healthcare systems by means of adequate regional public expenditure, and increase central government aid for regional healthcare programs. Diminish the pro-urban bias in health system financing by increasing the proportion of public funding allotted to rural healthcare;

8. Ensure that all essential health data is collected, particularly in rural and remote areas. Ensure that all essential health data is disaggregated by nationality. Dissociate health-reporting mechanisms from consequences of reward and punishment, and make all essential health statistics publicly available;

9. End the de-facto prohibition of foreign NGOs in Tibet and actively encourage their participation in improving maternal and child health in Tibet.

To the Special Rapporteur on the Right to Health:

1. Seek a formal invitation from the PRC to conduct a fact-finding visit in order to further assess the state of maternal and child health in Tibet;

2. Specifically investigate the disparities in health conditions and healthcare between the PRC and Tibetan communities of Gansu, Qinghai, Sichuan, and Yunnan Provinces and the Tibet Autonomous Region;

3. Specially investigate the state of maternal and child health and healthcare in rural and remote regions of Tibet.

4. Specially investigate claims of on going, government-sanctioned, forced abortion and sterilization in Tibet.

5. Transmit an urgent appeal to the PRC based upon the issues highlighted in this report.

To the International Community:

1. Encourage the PRC to adhere to the international human rights treaties to which it is a party, in particular, the ICESCR, the CEDAW, and the CRC. Encourage the PRC to fulfil the core obligations associated with the right to health in international law and the Constitution of the PRC.