

HMP 690: Exploring Micro-Insurance in Urban and Rural China

This document is an attempt to aggregate the information gathered by the students who participated in the trip to China as part of HMP 690, Winter 2008. The contributors are Joe Donlin, Shachi Khichadia, Mark O'Connor, Derrick Pfeffer, and Andrew Pritchard. Over the course 2 weeks, we visited primary, secondary, and tertiary care facilities in the urban and rural areas in and around Beijing, Tianjin, and Shanghai, as well as Beijing University's Department of Health Policy and Management, and the Shanghai Academy of Social Sciences. The information pertains largely to health insurance, policy, and utilization in those areas, and in China in general.

Sunday May 4th 2008: Tianjin



Monday May 5th 2008:

We visited two community clinics and a district hospital. After a rushed breakfast we boarded our bus, which has apparently been assigned to us during the whole course of our stay in Tianjin. We arrived at the first clinic, which was a nice looking facility that was incorporated into the neighborhood. The entrance overlooked a park that sat in the middle of several apartment buildings. The clinic consisted of several rooms with observation beds, a sitting area and a small pharmacy. The clinic provided mainly primary care.

We asked many questions and got lots of information that simply isn't in the literature. Following are the notes we took at this facility:

Tianjin Urban Primary Care Facility: Community Health Service Station (Yuexiulu Jie Jiaoshiaun)

- Tianjin's system is structured around four levels of Care: 1) Community Health Station; 2) Community Hospital; 3) Secondary Hospital; and 4) Tertiary Hospital.
- Insurance is voluntary, not mandatory
- This facility is one of many throughout the city covering areas of approx. 10,000 residents. For the urban area, there is a 5 million population and there are 499 community centers. Each center serves 10,000 individuals.
- 3 most common conditions: fevers, chronic disease. Public health services and chronic disease

management make up the majority of services. Focus is on the children and on elderly people, which is typical for urban hospitals.

- Under the Public Health Bureau, there are 20 districts, 11 million people, 20 local health departments
- Emulates the Russian system
- There are 18 Public health priorities covered by government.
- The prices are regulated by government (set by Public Bureau of Tianjin)
- Most people have insurance but there are some out of pocket costs. The percentage of patients that pay out of pocket costs: under 15%
- If patients have insurance, the co pay shouldn't exceed 15%. However, the cap is 4 times yearly wages.
- 15% only relates to curative care.
- This is purely an outpatient facility, but will refer patients to 2ndary or 3ary hospitals.
- 20 to 30 patients are seen daily, plus an additional 15 house visits each day
- Prescription drugs
- Annual deductible is 800 Yuan
- If an individual is hospitalized, they cannot exceed the 15%. Therefore, there is an economic incentive to become hospitalized because then the maximum amount you will pay is 15%.
 - Formulary drugs are covered, non-formulary drugs are paid out of pocket by patients, nutritional supplements are paid out of pocket
 - Majority of Rx is used for hypertension, diabetes, and heart disease
- There are 3 types of insurance:
 - 1) Employer (implemented in 2000): mandatory; on average, the premium would be \$1,200 Yuan. The share of employees should be no more than 1.2% of wages. 20% of costs are paid out of pocket and 80% of costs are covered by the employer. The public and private sector costs are clearly different.
 - Employer sponsored cap is 4 times the wages. If you want more coverage, you can increase the premium (6x-8x) wages.
 - 2) Residential (implemented in 2007): Official registration required, migrants not eligible, children and elderly over 70 are not required to pay and covered by the government support, only people in the middle bracket are dependent on age (sets premium of 120 – 300 Yuan), voluntary insurance, 5-6 million people in the urban area. 3.6 million are employed. 1.1 is unemployed (only includes age 18-69). About 40% (1.1 million) choose to participate. The employer does not cover dependents.
 - 3) Individual – public government administered and private insurer, option is to buy insurance for specific for specific categories of disease and coverage rate is 3%, 100% paid out of pocket, 150 Yuan, more used for catastrophic coverage, used as a supplemental type of insurance.



After that we went to another primary care facility, which was somewhat larger, and was integrated with an inpatient center. This was part of a sort of district administration center which also included an office for the local neighborhood organization and a policy office. We were given a tour of the clinic and then taken to a room which took up the entirety of a smallish free standing building in the court yard in the center of the complex. There we were served leechy, green oranges, bananas, and offered cigarettes while we asked more questions. Here are the notes from this facility:



Tianjin Urban Primary/Secondary Care Facility: Community Health Service Station

- Provision of primary care –Chronic Disease Management.
- Located in a small neighborhood – in the police station. Cost of services are the same throughout the district. Majority of patients suffer from cardiovascular diseases.
- The staffing is 2 physicians for 10,000 persons.
- There are 3 observation outpatient beds, with some people receiving IVs.
- Structural financing: 70% - 80% of the revenue comes

from the government and 20% - 30% comes from clinical revenues. Support from the government comes from both the municipal and district level. The bottom line is that the majority of the funds come from the district level, but the municipal level also subsidizes some as well.

- There are 50 beds, but only operated at 30%. They are looking to expanding to 50 beds in order to become a stroke rehabilitation center.
- The primary role is to provide public health and not curative care.
- The government provides a financial copay incentive for persons to seek care at the appropriate level of hospitalization.
- The government pays for the infrastructure, education, and technology of the hospital.
- Prices are the same across primary and tertiary care and are set by the government
- Pay increases with experience of doctors
- Tianjin is a special type of municipality because it is directly under the central government, there is no provincial government in between.
- The majority of government funding comes from the district, while 25% comes from the municipality. In addition, the remaining 20% of the budget is self-generated.
- Facility provides a mix of inpatient and outpatient services
- Services include: dermatology, acupuncture, oncology, prostate, Chinese medicine, radiology, pediatrics, herbal preparations...etc.
- Public Awareness project: have signs with health information on chronic disease; they switch these signs every 2 months to have a different topic covered
- Part of a network of community health facilities; one of 8 stations within this one network
- Costs for 1 bed/day in hospital = 100 yuan (or \$15)
- Other health centers may refer to this hospital



- Three levels of hospitals:
 - 1st level hospital:
 - In charge of the district's health centers
 - Completely independent from secondary and tertiary hospitals
 - 2nd level hospital = district hospital
 - 3rd level hospital = municipal hospitals or sometimes national
- Population health/Public Health
- this hospital handles some public health roles
- priority is to take care of minor medical concerns and early level
- annual deductibles: 750 yuan @ primary; 1000 yuan @ secondary; 1200 yuan @ tertiary
- previously, there was incentive for people to go straight to the tertiary hospitals; this scheme attempts to change people's preferences
- Tianjin has invested in improving facilities and quality of care at primary hospitals
- They have the list of 18 Public Health Items posted.
- ❖ There are social services in place to help people who are uninsured or cannot afford the cost sharing. Here is an overview of those programs:
 - ❖ Social safety net (5 protection)
 - ❖ Will insure minimum level of clothing, food, housing, transportation, burial
 - ❖ Those gap people will be eligible
 - ❖ Some conditions to meet for social welfare:
 - ❖ 1- don't have any children who can help you
 - ❖ 2- if you don't have spouse
 - ❖ 3- cannot work, no physical/mental ability to work
- ❖ The above usually pertain to the elderly. No explicit threshold, but reasonable to presume because its already in poor, rural areas. In Tianjin there are no poor counties (important to keep in mind)



Before going to the next location we went to lunch, which consisted of a lazy susan with all sorts of exotic foods, lots of toasting, and gift giving. We gave some of the pennants we'd brought and were given gifts of traditional Chinese opera masks in cases. The presentation was all quite impressive.

Following that we got back our bus and went to the local hospital. This hospital served the area covered by the clinics we visited as well as several others. It was a large new building with modern equipment and labs. One thing that stood out was the amount of open space. There seemed to be unused rooms, wide walkways, and labs and examination rooms seemed to be larger than necessary. The administrator who led us on our tour told us that the facility was still being built, and we saw a

model of what it would look like when completed. After the tour we sat down in a conference room and asked some more questions. Here are our notes from the hospital:

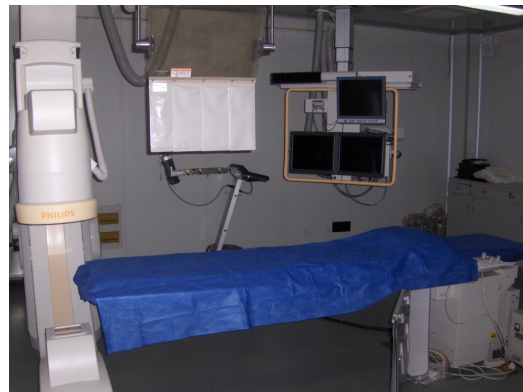
Tianjin Urban Tertiary Care Facility: Tianjin Union Medical Center



- Average length of stay: 14 days
- 3 levels, 200 Yuan, OP visit
- Average cost of hospitalization: 700-800 Yuan per day. Total cost: 4,700 Yuan
- 25% co-payment (it could be 20% -30% dependent on age). For older age group, co-payment tends to be lower than for the younger age group
- Deductible: 1200 Yuan
- Outpatient services: Low income flat fee, 50 Yuan per visit
- For hospitalization services, social welfare will

cover those people that cannot pay. There needs to be proof of low income household

- The hospital's policy is that they cannot turn patients away
- The hospital takes a loss with charity care. Sometimes, there are negotiations for low income people and the hospital waives the fee.
- 20 operating rooms, 1200 acute room beds
- Colonoscopy costs: 200 Yuan
- Endoscopy costs: 500 Yuan. With anesthesia, the cost is 600 Yuan.
- Occupancy rates: 100% as 1200 beds are filled. 10% of acute care occupied by patients who should be discharged.
- There are less than 5% private hospitals in the area and more of a public health system. There is also more fee-for-service type payments in these hospitals
- Room Costs
 - VIP Room costs: 500 Yuan per day
 - Room for 5 beds: 25.5 Yuan/day
 - Room for 3 beds: 40 Yuan/day
 - Room for 2 beds: 60 Yuan/day
 - Single occupancy: 120 or 150 or 240 Yuan/day, depending on amenities
- 700 physicians, 700 nurses
- Traditional Chinese medicine is less than 200 Yuan
- Quality measures:
 - 1) Structure: qualified personnel, facility, equipment
 - 2) Clinical: protocol
 - 3) Patient satisfaction survey
 - 4) Health Outcomes: noted at the time of discharge, not one year later



- Overall, there is a report card system and these surveys are conducted every month (i.e. time series analysis),
- Revenue generation: Outpatient – 1/3 of revenue is generated from OP, Inpatient: 2/3 of revenue is generated from IP.
- Clinical income
 - certain departments make more income; some are more profit-driven; others are not
 - @ hospital level there is a redistribution of income to the doctors in departments with lower profitability
- The specialties that generate the most revenue are colon cancer (700-800 cases) and spinal surgery.
 - AOL for these services is 20 days. This hospital is recognized nationally for these services.
- The plan for the next 5 years is to expand the hospital so that there are more beds.
- Malpractice insurance: monthly premiums are 400 Yuan for physician to pay and 400 Yuan for government to pay: total is 800 Yuan/month
 - This accounts for 26% of the physician's monthly income.
- Competitive landscape of hospitals in China: There is not a great deal of competition because most people just go to the nearest hospital. However, some will need to seek out institutions based on specialty care
- Physician's average monthly wages:
 - 5 years of experience: 1500 Yuan/month
 - Internal medicine: 1500 Yuan/month + 1500 Yuan (performance bonus)
 - Performance bonus is based on physician's productivity
- Comparison of UM and Tianjin Union Medical Center
 - UM: 800 beds (4FTE), overall expenditure: 75 million dollars per year
 - Tianjin Union Medical Center: 1200 beds, overall expenditure: 400 million Yuan per year, does not cross subsidize other hospitals



After leaving the hospital we returned to the Geneva hotel and met to figure out what to do with all the notes we had taken. After much discussion the final verdict was for everyone to type up the notes they'd taken and we would add them here as a sort of raw data. We also added a few more questions to our survey, based on the information we got from the facilities we had toured. We only had about 30 minutes to work on that before it was time to head out for dinner. We got on the bus, along with Dr. Cheng and Dr. Duo, who had accompanied us during the day, and were taken to a restaurant which is famous for its dumplings. Of course, the food was delicious. Afterward we returned to our hotel.

Tuesday May 6th, 2008:

Before setting out we met Dr. Liang in the breakfast room at 7:00am to discuss our plans for the day. We would be visiting health facilities in the rural areas surrounding the city. The first location was a community hospital that provided both inpatient and out patient services. There we met up with Dr Cheng and Dr Jiang, as well as several doctors who worked at the hospital. They gave us a tour. The building and equipment appeared to be older than what we'd seen the day before but appeared well maintained and adequate for providing basic surgeries, etc. One of the most interesting things we saw was a chart on the wall near the entrance that explained the new Farmer's Insurance Scheme and

NCMS, and included a fee schedule. Here is the information we gathered from this hospital:

**Rural Tianjin Health Facility:
Township Hospital**

- This area is part of one of China's Special Development Zones
- Yuan contributions per year
 - Individual residents: 30 RMB
 - Village/town: 10 RMB
 - County: 35 RMB
 - City: 55 RMB
 - Total is 130 to 250 RMB (there is a range)
- Insurance coverage rate is 95%
- The 5% that is not covered are not considered local residents and these residents go through social welfare to seek health care
- 85% of the population is farmers
- The risk pool is 500,000
- The health insurance is run by the County Bureau of Public Health, State Department. This specific bureau only operates in rural areas, not in the city
- The Department of Social Services can take over the health insurance in the rural areas.
- Out of the 5 million farmers, 3.7 million are covered under the New Cooperative Medical Scheme (NCMS). 1.3 million are covered under other forms of insurance
- Confirmed that NCMS is a voluntary scheme. Out of the total 130 RMB, individuals contribute 30 RMB. Of the 130 Yuan, 20 Yuan is allocated to OP services and 110 Yuan is allocated to IP services.
- The insurance scheme is voluntary
- There is a liability cap of 40,000 yuan. For anything beyond that the patient may seek social service help. There is no deductible for inpatient services.
- Operational budget: capital investment of the hospital is subsidized by the government, 70% is subsidized by the municipal government
 - The hospitals do get a 15% profit from Rx.
 - The government covers 70% of all expenses, including all physical and capital infrastructure. The municipal government is responsible for the allocation of funds.
 - In the rural hospital, there are 7 physicians; 5 nurses; 4 lab techs.
 - There are 14 beds with 50% occupancy rates. ALS is 5 days.
- 150,000 people in the area are below the poverty line
- Quotes from Dr. Wong:
 - "99% of health care is government run in China. The overwhelming regulatory approach is not going to work in the long run. We need to rely on market mechanisms as well. Primary care should be left to the government, but anything beyond that, including tertiary services should be left to non-government sectors. The overuse of technology also poses a challenge to the health care system in China."
 - "Protection of poor is not the hospital's primary responsibility. The Department of Social Services is there to protect low income people. They provide 60 Yuan per person



for OP services. Depending on the coverage, deductible amounts are also waived. There could also be further discounts on co-payments.

- This is a relatively affluent rural area in Tianjin. China has 200 very poor counties and there are NONE in Tianjin.
- If costs for patients are not sufficient, they are determined on a case by case basis and then taken to the Social Services Department.
 - Social safety net consist of 5 protection values: ensure minimum assistance of clothing, transportation, burial, housing, and utility
 - Eligibility for Social Services is based on the following: 1) No children, 2) no spouse, 3) cannot work due to a physical or mental condition, and 4) there is no explicit income threshold.
- Hospitalization costs: 10 Yuan per day
 - Appendectomy episode costs: 1500 Yuan
 - C-section costs: 1600-1700 Yuan
- Financing Blue Chart located in the front of the township hospital
 - 10,000 Yuan
 - Township (village hospital): 60% reimbursement, 40% co-pay
 - County hospital: 40% reimbursement, 45% co-pay
 - Municipal hospital: 35% reimbursement, 50% co-pay
 - Co-payment decreases as the costs get higher
 - The upper limit for this insurance is 40,000 Yuan. If patients go beyond the 40,000 Yuan, he/she needs to seek additional insurance. If the patient cannot afford this, additional insurance will come from social services
 - Deductible: There is no deductible for IP services (there is a co-pay though), and 20 Yuan for OP services
 - The insurance covers prescription drugs. There is a 15% profit margin when selling drugs.
 - There are 26 hospitals in the Tianjin are serving 5 million people. 80% of the physicians service 30% of the populations. The government cannot require patients to go to the rural are but does offer financial incentives.

Our next stop was a rather small clinic that provided primary care services. The entrance was among a row of typical storefronts on a nondescript street. There we met the Dr. who was one of two physicians at the clinic and his boss, the director of the district public health bureau. The entire clinic consisted of four rooms of equal size: two with two observation beds and two padded chairs a piece. One was the entrance room, with a desk, cabinet, two benches, and some decorative wall hangings. The forth room, on the other side of this main room, had a pharmacy stocked with western and TCM medications, and various other equipment. We gathered in the main room and the Dr. explained the running of the clinic as the public health director watched from over his shoulder. Following is the information we gathered from this clinic:

Rural Tianjin Primary Care Facility: Community Health Station

- For 2400 people in the area this is the main place for primary care.
- Sees about 17 people per day for heart disease and disease management.
- There are 2 doctors in the clinic and they are available



24/7. (The doctor giving us the tour was born in the town and has worked at the clinic for over 30 years)

- Training: 3yr vocational school for medicine (after high school)
- Spent a year or so in residency, worked at county hospital and township hospital, “happy here”
- Provides both western and traditional Chinese medicine
- The infrastructure is worth 2 million Yuan and is paid for by the government.
- The majority of patients are covered by the NCMS. The uninsured pay OOP but there are not many.
- The insurance does not cover outpatient care.
- Operational budget: Clinical income – 60,000 – 70,000 Yuan and this is split between 2 physicians.
- Income around this area: On average, over 2000 Yuan/month or 24,000 Yuan/year. Less than 1/3 of the population are farmers. Most have jobs in the manufacturing facilities. The economy here has changed to be dependent on manufacturing (there is a large food processing plant in the area).
- There are no consultation fees charged, so Rx is the only source of income, with a profit margin of 15%
- Every day, the doctor makes 3-4 household calls to the elderly
- Insurance:
 - Child: 15 Yuan OOP
 - OP Visit: 15 Yuan OOP, physician stated that the vast majority can afford to pay this.
 - Items covered: 60% reimbursement under NCMS

On the way to lunch we made a quick stop at another township hospital. This one was similar in appearance to the first, although maybe a bit more organized and orderly in some sense. We saw the same fee schedule on the wall that we'd seen at the other, as well as a chart of the hospital staff. One of the staff members was in charge of insurance programs, so we asked if she was available. She was and we asked her and the head Dr. a lot of questions about the insurance programs and how they operate. Here are our notes from that discussion:

Insurance information

- distributed by the township gov't

Insurance claims – “advanced”

- computerized; claim form submitted electronically
- insurance claim processing center that handles all the claims
- so patients pay costs first and then are reimbursed
- what's available for those who cannot afford up front costs? A: must contact LSS dept □ they then waive the costs ahead of time
- reimbursements happen almost immediately...very advanced
- NCMS is included in 80% of rural counties; the other 20% are remote and mountainous regions; in Tianjin 100% have NCMS
 - The highest poverty areas “deserve highest priority”
 - Counties are located in very remote and mountainous areas (i.e. inner Mongolia, Ganzhu, Shingdong, Tibet – high plateau
 - Inaccessibility of these counties by transportation
 - Low population density
 - Fixed costs of setting up infrastructure is extremely high

- Central government is waiving contribution to NCMS for these people and it is seriously being considered
- Insurance rates much higher in the urban areas vs. rural areas

Central difference

- Old model: sustained by resources of local commune
- NCMS: high investment from central government

Amount to cause someone to go into poverty:

3000-5000 Yuan – in the poorest areas of China

10,000 – 20,000 Yuan – here in Tianjin rural areas

20% remote counties

- fixed costs to set up infrastructure are very high
- central government is considering waving the individual contribution
- Insurance Trust Fund: earmarked for rural insurance funding

New innovations (in the future?)

- Gov't provide better protection for basic primary outpatient care; right now it's OOP
- occupational health improvements
- Blue Chart in office is similar to previous offices
- Residents are covered under NCMS. People pay out of pocket if they are not covered by NCMS, but the percentage is very small
- People have to pay according to the blue chart for hospitalization services
- Appendectomy costs: 1500 Yuan. 60% reimbursement and 40% OOP
- Hospitalization stay is 200 Yuan per day
- Population is 30,000
- 30 patients for OP visits daily
- Clinical income per day: 5000-6000 Yuan/day
- There have been many improvements for NCMS over the last several years. Very few people cannot afford insurance, so it's not really a problem.
- Insurance claims are computerized and you can submit claims electronically. The insurance claim processing system started last year in 2007.
- Pay claims upfront and then the patients can get reimbursed later. All these township hospitals in the area used a computerized system.
- Low income people who cannot afford to pay the contribution for NCMS would have to contact social welfare programs to get coverage
- Before the NCMS, bankruptcy was relatively common due to the collapse of the health insurance system. After NCMS, bankruptcy due to health causes has reduced drastically.
- There are significant differences in cost of care for both urban and rural
 - Appendectomy: Urban cost is over 5000 Yuan and rural cost is 1500-1600 Yuan
- The older model was sustained from local county resources. The NCMS system requires substantial resources from the government.
- The NCMS scheme actually originated in Tianjin and then extended to other areas in China. Tianjin is very advanced and considered to be innovators of public health. In the next 10 years, they would like to see the government provide better protection for primary care and do more with occupational health.

After that we ate at a place called “Joy Luck Club,” there we were introduced to the local party secretary and several other important people. During the meal Jersey explained our whole project, and reiterated the important lessons we've learned in doing our project, including the three lessons of fund raising: no one will give you anything unless you ask, life's not fair, and keep trying.

On the ride home we talked about how the information we've been gathering meshed with our original research on microinsurance. Basically, we felt it didn't, and that what we had were essentially two separate projects. When we got back to the hotel we talked to Dr. Laing about our thoughts, and he agreed, saying that we might not be getting the information we had originally set out to obtain, but we were getting access to lots of good information about different things such as the inner workings of hospitals and insurance plans in China, and we just had to be flexible and figure out what to do with what we were getting. The issue of how all our information fit together was something that we had been grappling with, and Dr. Liang helped us to put things into perspective. Afterwards we spent some time on our micro-insurance presentation which we were to give at Beijing University the following day.

Wednesday May 7th 2008:

We got up early the next morning and got on our bus to Beijing. After checking into our hotel we made our way to Beijing University to meet with some academic types and give our presentation on the research we'd done on micro-insurance in China. A student on a Fulbright scholarship named Jason Monto was at the meeting, and gave his own presentation on the New Rural Cooperative Medical Scheme. Here are the notes from that presentation (we also received a copy of the PowerPoint slides):

Beijing University Presentation:

- The pooling is done on a regional level
- There was no coverage until 2003
- 1998: medical expenses raised the # of families living in poverty by 44%. 8.71 million people in 2003 did not get IP care even though they tried to seek it
- Private insurance is not big in China and accounted for 8.3% in rural areas in 2003
 - Farmers emphasize their own personal benefits. Private insurers don't want to insure rural residents due to adverse selection. An important barrier here is that the residents really distrust the insurance companies
- Program principles of RCMS
 - County run
 - Severe illness
 - Diverse financing: central, local, and individual
 - Voluntary participation
- Rural Hukou: refers to eligibility. For the RCMS, residents need to have a Hukou.
- Lots of employers don't follow these laws so there are compliance issues
- Migrant workers don't have formal employment



- NCMS total funds collected in 2006: 21.359 billion Yuan. Total paid out is 15.581 Yuan.
- Oversight of the program: Lots of people say they need to be hospitalized so they can get IP rates, but really do not need to be hospitalized.
- Local is considered to be province, prefecture, or township
- Medical Assistance (MA): Program for those who earn less than \$1 per day and government subsidizes payment to enter the program. Not as structured as the NCMS. Under 700 Yuan, you can qualify for the MA program. Currently, RCMS and MA are not linked.
- Goals of RCMS: Achieve universal coverage by the end of 2008 (by county), integrate IP and OP services, BMI and NCMS linked pilots to include both landless rural residents and migrant workers.
- Challenges to RCMS: small budget, not always voluntary, transparency and oversight (people don't have a budget), management capacity, skills and funding, poor/healthy subsidize the rich and sick with these low premiums and high co-payments.
 - Note on RCMS as voluntary scheme: All taxes from the rural residents were cut recently! If the scheme were to be made mandatory, the RCMS would be looked at as another form of a tax. Articles supporting RCMS always state that this scheme will not be a burden to farmers.
- Most counties in China have 200,000-500,000 people
- Bianzhi: management principle
- RNCMS Implementation Method: Choose best counties for pilots so there's a selection bias there. These counties already have baseline strength.
- Reimbursement for IP and OP is different in NCMS
- As of September 2007, 85.5% of all counties in China have NRCMS programs covering 730 million rural farmers with 15 million RMB
 - Reimbursed 20.3% of average one time OP costs and 23.2% of average one time IP costs
- Contribution: 100 Yuan minimum (30-50-100) and this varies from county to county
 - Western: Central (40), Local (40), Individual (20)
 - Eastern: Local (80), Individual (20)
- Research challenges to RCMS
 - Government data is confidential
 - Not progressive
 - Poor subsidizing the rich since people pay a flat fee of 100 Yuan. A major challenge is how to estimate income of rural residents. The local government is reluctant to cooperate.
- Relevant Studies for NCMS
 - Stanford: Scott Rozzel, an agricultural economist.
 - CHEI, Chinese Health Economics Institute
 - DID study, Wagstaff World Bank (2007)
 - Wang Hong (Yale), Liu Yuanli (Harvard)
 - China: Wu Ming, Hu Shanlian, Mao
 - Zhengzhong

Once the presentations were finished and we had all asked our questions, we headed over to the Beijing University Teaching Hospital, which is a large, modern, tertiary care facility. A guard came out of a booth at the hospital entrance and directed the van driver to a parking lot. We got out and Dr. Liang introduced us to the doctors who would be giving us a tour. Our tour begins with them leading us in, past a large main entrance and down a hall to a room with a modern-looking CT scan machine.

We looked around the room a little and then posed some questions to our guides, with the help of Dr. Liang's translations. After seeing the hospital we were taken to a conference room decorated with flowers and calligraphy art on the walls. We were served tea as we asked more questions. Here are the notes we took:

Urban Beijing Tertiary Care Facility: Beijing University 1st Teaching Hospital (Bei Da Hospital)

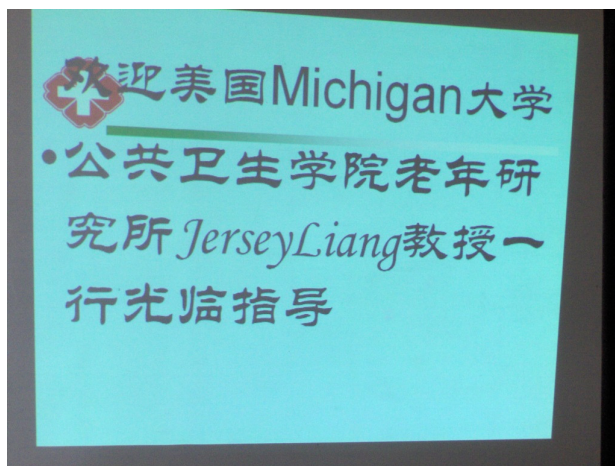
- 1500 beds 10% - 15% long term patients in the hospital
- 95% occupancy rate, in some departments the rate is up to 100%
- Specializes in urology, CT scans and MRIs
- 800 physicians, 1200 nurses
- 17 operating rooms
- Annual expenditure: 1-1.5 billion RMB
- ALOS: 13 days
- Average cost of an episode: 16,000 Yuan
- Cost-savings: Government will set price limits for some procedures
- Major source of revenue: diagnostics. In urgent cases, hospital must treat all patients.
- 65% of 16,000 RMB is covered by insurance here. 35% is the co-payment associated with this charge.
- Operational budget: Only 5% of the total revenue comes from the government. Hospital has to generate revenue primarily through clinical income.
- OP/IP: Split 50/50 in terms of revenue generation. Major source of revenue comes from lab/diagnostics. There are also surgeries at this hospital.
- Cost of appendectomy (Dr Liang's "Benchmark"): 3000 Yuan
- Cost of C-section: 5000 – 6000 Yuan
- CABBAGE: 20,000 – 30,000 Yuan
- Homeless in Beijing: health care facility established within each district and is connected with the Social Services.
- There are similarities between the US and China in terms of legal status (non-profit versus for-profit). Non-profits demand prepayments.
- Utilization: 5,000 OP visits per day
- There are 15-16 million people in Beijing and 5-6 million of these people are considered to be migrant workers.
- Partnerships already established with Harvard University and Duke in US
- Levels of Insurance Coverage (Employer + Residential)
 - IP services: deductible is 1300 Yuan for the 1st hospital episode. If greater than 1300 Yuan, reimbursement starts with 80%, 85%, 90%. Anything between 1300 -30,000 Yuan, reimbursement is 80%. Anything beyond 30,000 Yuan, the reimbursement is 85%.
 - All these apply only to services that are covered. Effective degree of reimbursement is 60-65%, versus 80%-85% since not all services are covered.
 - Non-formulary drugs are excluded from reimbursement
- Patients in outpatient services need to be registered with the hospital and pay a deductible to obtain services.



- Basic physician wages are 3000yuan/month.
- Hospitals are rarely consulted by the government before implementing insurance schemes.
- Every year, there are 200 students at the hospital.
- Consultation by the government? A: very little; but they do have physicians in public interest groups, etc.
- Individual doctors can make more in a performance related bonus.
 - Income is tied to productivity, the number of patients seen, # of operational services performed.
- Peking residents are covered.
- Improvements that need to be made to the current insurance schemes:
 - the scope of insurance coverage needs to be expanded.
 - The benefits covered under the current scheme need to be expanded.
- They do provide charity care and free services. About .2 - .3% of cases are considered charity care and the hospital takes a loss.
 - Urgent cases must be treated regardless of insurance status.
 - There isn't much help for non-urgent cases.
 - Hospital has partnership with programs for the homeless.
- OP: 2/3 of revenue comes from pharmacy and there is a reasonable profit margin
 - If the medication is less than 500 Yuan, there is a 15% profit margin
 - If the medication is over 500 Yuan, can only tack on 75 Yuan
 - Formulary drugs are eligible for reimbursement. Lots of drugs are not formulary though. Same profit margin here applies
 - China: Rx accounts for 50-60% of health expenditures in the urban areas and accounts for nearly 70-90% of health expenditures in rural areas.
 - OECD countries: Rx accounts for less than 20% of health expenditures.

Thursday May 8th 2008:

The following day we continued our tour of urban health facilities in Beijing. Our first stop was Xuan Wa Hospital, a secondary hospital that specialized in geriatric care. After we were introduced to the managing doctors, we were led to a conference room with bananas and tomatoes on the table. There were several plaques on the walls with the hammer and sickle insignia on them which appeared to be awards. At one end of the room, next to a large fish tank, was a screen on which was being projected some words in Chinese and, "Dr. Jersey Liang." We all sat down and the hospital superintendent introduced himself, welcomed us, and proceeded to give a presentation on the running of the hospital, after which we asked more questions. Here are the notes from that meeting:



Secondary Hospital in Urban Beijing: Xuan Wa Hospital

- 200 beds
- Mainly for chronic diseases
- As of 2001, there has been greater emphasis on geriatric care
- Specialty now is geriatrics, no pediatric services
- Very comprehensive service hospital
- 10,000 sq-meters of floorspace
- Major public health function: preventive care in addition to primary medical care
- Investments made in geriatrics due to the aging

population

- In 2007, this district, people between ages 60-85, accounted for 21.3% of the population. About 160,000 people in the Kathman area were between these ages and the total Kathman district has around 600,000 people.
- # of discharges increasing for the elderly
- There are 5 communities within the Kathman area
- 90% of all IP cases have 5 or more chronic diseases. Requires extensive clinical experiences to address these multiple diseases.
- There is no such thing as an open staff model in China
- 90% occupancy rate at this hospital
- ALOS: 1 month, multiple system failures.
- Chronic disease is covered by insurance and is 90% covered.
- Average episode costs: 10,000 RMB and the insurance will cover 90% of this.
- Elderly are not covered under employer-sponsored insurance in China. They are on retiree plans.
 - Retiree plan coverage
 - Men retire at age 60 and women retire at age 55
 - There is no explicit age requirement
 - There is a compulsory requirement for retirement. Most countries embrace this concept except for the US.
 - Pension benefit: function of individual's work
 - Many retirees are able to continue to work at reduced pay since they already receive a pension
- Deductible: Overall deductible for IP and OP services combined is 1300 Yuan per year. Greater than 1300 Yuan, 90% of costs are reimbursed by the insurance and there is a 10% co-payment
- Operational revenue here comes from the district level government
- Monthly income for attending physicians is 5,000 RMB
 - 3,000 RMB (2,000 in basic wages and 1,000 in performance wages)
 - Year end bonus is 5,000 – 6,000 Yuan. 42,000 Yuan/year
- Co-morbidity is common among patients
- Each patient is assigned to one physician, who manages their health and treats their multiple conditions in the case of co-morbidity
- Patients with acute cases are admitted regardless of insurance status. Very few are unable to pay
- Leading causes of admission at this hospital
 - Cerebral vascular disease and respiratory lung diseases
- 32 units, clinical specialties
- Internal medicine, surgery, OB available but no pediatrics
- 200,000 outpatient visits/year
- good technology – color ultrasound, CT, GI scopes
- since 2001 they have emphasized geriatrics
 - because of the aging population
 - declining fertility rate
 - and long-term custodial care
- people over 60 years of age = 10% in 1990 and are growing RAPIDLY!
 - 2007: 60-85 y.o.'s = 21% of population in this district
- catchment area = 160,000 people
- district = 600,000 people
- There are 15 areas served by this secondary hospital. Each of those has a primary care facility.

- # of discharges of 60+ y.o. ppl...2005 = 557 ... 2007 = 990 (ish)
- 95% occupancy rate
- Volume of OP: 200,000 visits per year
- Staff of 400 people
 - 136 mid level physicians (attending physicians and above)
 - Over 100 nurses

Our next stop that day was at a primary care facility tucked into a neighborhood area. The entrance led to a hall with a pharmacy on the right and a waiting area on the left, with rows of chairs and pictures on the walls. Several rooms opened off the waiting area. These rooms consisted of observation rooms and doctor's offices. We met the director and asked her questions. Following are our notes from our discussion:

Urban Beijing Primary Care Clinic:



- Staff of 9 (5 physicians, 1 Chinese practitioner, 2 pharmacists)
- Average OP visits: 60-70 to 100 individuals per day
- Offers medical care 5 days a week and ½ days on weekends
- Primary focus is clinical care
- 70% of patients are 60 or older
- Financing: district government provides wages for physicians
- Clinical revenue is generated and then turned over to the government. Similar to NHS model in the United Kingdom
- Physicians compensation is comparable to that

of a secondary hospital

- 5% of patients don't have insurance coverage, and these people are usually migrant workers
- Annual deductible: similar to secondary hospital. Amount of reimbursement is higher at this hospital.
- Average out of pocket costs: Accounts for 10% of average expenditures
- Leading chronic illness: hypertension, diabetes, heart disease
- Population: 43,000 individuals in the Kathman area (includes migrant workers)
- Yearly operational budget: 300,000 Yuan
- 70% of revenue is generated from Rx.
- Physicians stated that the insurance coverage needs to be improved for the middle age bracket. It is fine for current employees because they are covered through employer sponsored insurance. However, resident coverage is only good for the kids and for the elderly. Coverage is not good since insurance is still voluntary.
- Process for designated hospitals under insurance
 - For secondary hospitals, each individual can select 1-4



- There are no restrictions for choosing tertiary care
- For primary hospitals, each can select their own hospitals, but most people select based on proximity.
- Private clinics in China
 - Perfectly legal but there is not sufficient demand
 - Not a viable business model in China
 - If you choose to start a private clinic, you need to be certified by the medical insurance bureau.

Following our visits to the urban hospitals, we took a 30 minute taxi ride to have dinner at Dr. Liang's aunt's home, in an apartment complex in the suburbs. The food was delicious, and she had prepared so much that we had to take some home!

Friday May 9th 2008:

We started our tour of the more rural areas surrounding Beijing with a visit to Sunyi Hospital for Women, Children, and the Aged. This was a very modern, very new hospital; so new that the building was still covered with scaffolding. We were introduced to the doctors who manage the hospital and then led to a brightly lit conference room in the center of which was a large mahogany table with flowers and microphones. We were served tea. Along the back wall were large windows overlooking the rest of the medical/admin buildings. Behind those were rows and rows of apartment buildings and construction cranes. Here are our notes from that conference:

- mixture of urban and rural
- large migrant/floating pop.
- area has a lot of industry, ranked #4 most wealthy area surrounding Beijing.
- Population is 550,000 and 200,000 migrant workers.
- three layers of rural health care:
 - 1) village health station;
 - 2) community health center; and 3) secondary.
- allowing additional involvement from private sector (in addition to the “three layers”)
- this is considered to be the leading hospital in the district
 - 1200 staff, 400 phys., 600 nurses, 700 beds,
 - “regional medical care center” same as tertiary care hospital in urban area
 - ncms started in the area in 2003, is covering an area of 350,000 people. of these, 320,000 are now covered.
 - from 2004-2006, # covered increased from 230,000 to 320,000
 - coverage increased from 100,000 to 400,000 yuan over the same period
 - from 2004-2007, 59% of beneficiaries used services, amounting to ~670,000, costs of hospitalization increased from 20%-50%, alleviated around 2882 households, or about 9000 people from falling into poverty due to catastrophic medical expenses.



- The means of communication comes from the local government within each village there are 2-3 person responsible for the administration of NCMS.
 - Undertaking public campaign is part of their job, since the health benefits of the insurance have increased. Surveys are conducted to assess demand in the community. In 08, the funds exceeded 100million and the government covered more than 90%. Over for years, the government funding is expected to increase to 138million Yuan. In patent/out patient for major diseases is 120millionY.
 - impact of NCMS in terms of poverty alleviation was calculated from household income, compared to that it would had been with the average cost of health care without the scheme.

* Rural Cooperative Medical Scheme Information

- Started in 2003 in Shunyi district
- 350,000 rural populations of farmers. Of this population, 320,000 are covered by the NCMS (90% coverage).
- From 2004-2007, # individuals covered increased from 230,000 to 320,000. Rate of participation increased from 56% to 90%. In 2007, the coverage is estimated to be 97%.
- 18 million Yuan in 2004 and 71 million in 2007 and the vast majority of these funds are all coming from the government
- 2004: Individual contributions: 5.5 million Yuan. 2007: Individual contributions: 11.1 million Yuan.
- The government covers low income residents.
 - 100,000 Yuan in 2004 to 400,000 Yuan in 2007
- How was participation in this scheme increased? Major mechanism was to inform the public through an established system of local government (district office to village office). The village office has 2-3 personnel responsible for NCMS affairs. There are public campaigns to encourage participation. The benefits of NCMS has also increased and improved over the past couple of years. There are surveys of satisfaction conducted annually with 1,000 individuals.
- In 2008, the total amount of funds raised for NCMS was over 100 million Yuan. Of the 100 million Yuan, the government covers close to 90% of Yuan. This includes expenditures of ½ million Yuan. These funds are used to cover premiums for low income people. Individual residents cover 14 million Yuan in 2008.
- 10% of total funds to protect themselves from catastrophic expenses.
- Overall expenditure for 4 years is about 138 million Yuan: accounts for 94% of the funds raised. These funds (120 million Yuan) went to IP + OP services for major diseases. Remaining 18 million Yuan went to the following:
 - OP services: primary care accounts for 17 million Yuan
 - Physical examinations: 1.8 million Yuan
- Between 2004 and 2007, benefits covered by NCMS increased significantly. 59% of beneficiaries utilized services during period amounted 670,000 individuals who utilized service. 53,000 individuals utilized IP services and 44,000 individuals utilized for OP services.
 - Cost of hospitalization: Hospital care covered increased from 27% to 50%. For the individual, the highest proportion of reimbursement was over 90%.
 - Average reimbursement: 2147 Yuan in



2004 and 4742 Yuan in 2007

- 1,658 individuals received reimbursement of 10,000 – 20,000 Yuan
- 628 individuals received reimbursement of 20,000 – 30,000 Yuan
- 596 individuals received reimbursement of over 30,000 Yuan
- Average household size: 3.1 individuals
- The NCMS has alleviated 2882 households or over 9,000 individuals from falling into poverty due to catastrophic coverage.
- The impact if NCMS on poverty alleviation has been very significant. By looking at the household income of individuals, assuming without any reimbursement from NCMS, these households would surely fall into poverty.
- The poverty level varies between urban and rural
 - Urban: 300 Yuan annual – this doesn't seem right?
 - Rural: 600 Yuan annual (less than \$100 per year)
- NCMS is a unique system based on the following factors:
 - Have local control
 - NCMS is designed by district and managed by district
 - Voluntary
 - Extend coverage to households
 - Financing: individual and government of different levels (district, township, and village)
 - IP + OP services coverage for major medical expenses
 - Generate bigger risk pool
 - Participation rates are calculated by taking the individuals as the UNIT.
 - Partial family: 2 out of 3 may participate in the family. So rates are calculated on an individual basis, NOT on a family basis.
- Issue of migrant workers and Huko
 - Huko in rural areas, would be covered for premiums under coverage
 - NCMS is tied to where the Huko is (where he resides)
 - Huko is a major challenge to how Chinese people get coverage. Economic development varies significantly across areas and the benefit and reimbursement rates also significantly vary. Yet, the Huko system remains VERY inflexible.
 - Example: If Mr. Wong is a resident of the Shunyi district, but he works in the district of Beijing. He has the following 2 options and can choose only one.
 - Maintain Huko in Shunyi and eligible for NCMS. Costs to him may be 40-50 Yuan per year
 - The good job in Beijing will be covered by employer sponsored insurance but the premium could be well over 100 Yuan and will be much more expensive than option 1.
 - Partial families can sign up for NCMS
 - Can be injured in Beijing and still go to NCMS
 - If Mr. Wong incurs medical expenses in Beijing, insurance reimbursement will still be based on Shunyi reimbursement because that's where his Huko is (there are very few cases like this)
- Cost of appendectomy: 2000 Yuan
- The exclusions for NCMS are different in every county. There is a parallel with NCMS and Medicaid. Each local government, just like each state, has the discretion of adding benefits where they want. Suicide is always excluded from reimbursement.
- 10 unique attributes of NCMS
 - Gradually increased amount of funds. In 2008, the average per capita expenditure is 320 Yuan per year. Plan in 2009 and 2010 is to raise the average per capita expenditure to 420 and 520 Yuan, respectively. Increase investment on a per capita basis. In 2003, average per

capita expenditure was only 80 Yuan.

- Benefit designs
 - General OP, IP for major diseases. General IP and OP services versus major medical services. The relative ratio is 3:7. 30% to general IP and OP and 70% to major medical services
- Rx designs
 - There is no deductible, but there is a co-payment in place
 - ◆ Benefit OP cap: 2,000 Yuan
 - ◆ Benefit IP cap: 100,000 Yuan
 - ◆ No deductible at all for services
- Taking significant steps to address urban/rural disparities
 - Insurance is becoming a special priority for children and the elderly. Now there's a special focus on children
 - Liability cap was 100,000 Yuan and has been raised to a maximum benefit of 170,000 Yuan.
 - Enhanced benefits
 - ◆ Urban: for level 1 and 2, there is no deductible
 - ◆ Deductible only exists for tertiary care
 - ◆ They do reimburse general OP services
- Address demand for chronic disease management
 - For traditional medicine, increased reimbursement to providers by 5%
 - Increased reimbursement by 5% for those who use medical care for the first time (means they previously have not used medical care).
 - Aims to reduce degree of subsidy of healthy to sick
- Encourage people to utilize medical care at the village health clinic as much as possible for minor illnesses
 - Economic incentives have been created to encourage this type of behavior
 - ◆ Increase reimbursement by 10% for these clinics
 - ◆ Waive registration fees as well as consultation fees
 - ◆ Waive IVY fees
 - Acknowledges that there are physician shortages in rural areas
- Encourage competition to regulate and improve quality of care
 - 34 total medical institutes includes both public and private
 - ◆ Only 2 NGOs/non-profits in Shunyi (primary and secondary)
 - ◆ Now county is being more open to allowing more privates and non-profit hospitals in the area
- Huko System
 - If Mr. Wong is from any other province but he marries someone from Shunyi, she will be able to move her Huko from Shunyi
 - Huko is a domain of public security
 - Significant new initiative: With NCMS, try to extend insurance benefits to spouses who are not residents in Shunyi so that they can be covered.
 - If you have a child, both parents are non-residents in Shunyi, his child will not have residency in Shunyi. If only one parent is not a resident, then the child may become a resident.
- Maintain integrity of NCMS
 - All insurance premiums raised are kept in a separate account to be earmarked for NCMS. Funds cannot be diverted. There is a closed management of funds.
 - Tax system on China: major source of tax revenue are from enterprise, sales, and

residents. The district government gets a share of this tax.

- Reasons for NCMS voluntary versus mandatory
 - Benefits are close to 90% subsidized by the government so any rational individual would want to be a part of it. She mentioned that it would be foolish not to join. Health insurance is a public good. It is easier to swallow at the beginning if it's voluntary. In addition, if the scheme is voluntary, it motivates the government NOT to do a lousy job and makes the government more accountable. People want choices that would encourage competition
 - At the beginning of NCMS, residents remained unconvinced at that time, the government made more investments to encourage participation. Individual premiums are sufficiently low.
 - Dr. Liu superintendent attended from this section on
- Initiative to maintain participation of the public
 - Remarkable initiative including:
 - ◆ Management committee of NCMS (15 people)
 - Function of this committee is for program design and evaluation of the NCMS like the BOD
 - ◆ Supervisory/Accountability committee (15 people)
 - Focuses more on the financial accountability and ensures that the funds are well spent
 - ◆ About 1/3 – 2/3 of the committee includes rural farmers to encourage democracy. However, it is interesting that the rural farmers are recommended by the local government.
- Chinese government initiated a major reform. Under the old model, the government was more interested in controlling and regulating. Under the new model, the government is more interested in providing services to the people. Therefore, the accountability more important to gain confidence of the people they serve.
 - It would be reasonable and there should be an exchange between the World Bank, WHO, and MOH of China. Dr. Yen (Peking University) says organizational design is due to prior bad experiences as the funds have been misappropriated in the past
- NCMS program is critical to win the confidence of the rural residents to make this program work. Very progressive.
- Management costs: administer costs
 - District government level: staff of 15
 - Townships: 22 lower units
 - Within each township, 2-3 workers are operating this system
 - District: Total of 90 employees to handle managerial tasks. Admin costs DO NOT come from premiums or funds allocated to NCMS. The government allocates additional funds for these costs. This proportion is quite substantial.



- Because this was a new initiative, a new unit was created
 - Challenges to physician shortages in rural areas
 - Standard of living contributes to uneven distribution
 - Training is very low in rural areas.
 - New initiative by the government to reduce the gap between urban and rural populations
 - ◆ Physical plan, equalize and try to make more homogenous
 - ◆ Disparities in training: rural providers not likely to be trained in universities. 75% are not trained.
 - ◆ Government is currently working on improving compensation, has reduced significantly over the past couple of years
 - ◆ Additional training for physicians available
 - ◆ By 2010, government will provide additional rural health training in order to upgrade the system
- hospital has 2-3 full time personal in each village working on the administration of the ncms, getting people enrolled, etc.
 - total funds raised in 2008 for running the ncms ~140 million yuan, 90% comes from the gov.
 - 94% of the funds have been spent on in/outpatient services for major diseases such as cancer, heart disease
 - 10% set aside for catastrophic stuff (a sort of reinsurance)
 - What is Unique About this District's System?
 - managed locally, voluntary, financed through private, gov of different levels.
 - Deductible: there is none. There is only copayment. This is for all medical services and Rx.
 - benefit cap of 100,000 yuan.
 - increased level of reimbursement for TCM by 5%
 - increased reimbursement for people who never used services, to encourage them to use service, reduces subsidy of healthy to sick, at least reduces the perception that that's the purpose of the program.
 - to encourage people to use care at village clinic level, they reduce charges for use of these facilities and services.
 - want to encourage competition to improve quality of care, so they allow private/nonprofit health facilities to operate in the district. Within Sunya district there is 1 2ndary non-gov, non-profit, and 1 3ary in this district (so 2 out of 34 in the Beijing area).
 - ❖ NCMS has a plan for rates of reimbursement if people have emergency treatment in urban areas. But ultimately treatment is tied to the network in the region where people are insured, which in turn is related to a person's hukou. So hukou is a major inhibitor to providing insurance for people to get treatment in the area they're actually living in.
 - ❖ there's a min. standard for every ncms (a la medicaid) and then every local gov. has the option of adding more benefits, etc. They'll add stuff based on their level of development/how much they have to spend.
 - ❖ they admit that there's a significant shortage of phys. in these more rural areas.
 - ❖ main sources of taxes are on income from enterprise, individuals, and sales taxes. A portion of these taxes goes toward financing district health services.
 - ❖ even though its voluntary, it has a coverage rate of 97%, because “any rational person would want to have the coverage” 40-50 yuan/year for 400,000 in coverage. Also, it's necessary to be voluntary in order for the competition they talked about to take place.
 - ❖ there are 2 committees to monitor the accountability of the ncms and health bureau. They have 15 members each, with farmers serving at members. Monitoring use of funds, etc. The farmers are recommended by local party members, which may set up a conflict of interest, since they are

recommended to serve by the people they're supposed to be monitoring.

- ❖ the idea that the gov has a role to provide services is new. under this idea, these monitoring boards are necessary to insure/give the impression that the gov is working to help people rather than just there to control people. There have been scandals in the past involving misuse of funds, so this tries to prevent that, also it's a new program, so people's confidence is important in its success.
- ❖ there are 90 full time staff to run the district medical costs. The admin/management costs are covered by the gov, in addition to the money it gives for the NCMS staff.

Our second stop of the day was at Shinyu Hospital. A secondary care hospital with marble floors and walls. The main entrance opened onto a large pharmacy and waiting area full of busy patients and doctors. There were counters for receiving Chinese medicines along the right wall and windows for western medications on the left. A stair case led to a second tier with observation rooms.

Beijing Rural Secondary Hospital: Shinyu Hospital

- Patient card implemented 2 years ago in 2006. In 10-20 years, all patient medical history will be available on this card. The card is just for this one hospital. Currently, each citizen has national ID cards and the plans are to integrate the ID card and the medical card. There is minimal ID information on the card. The function of the card is that if you use the card, it is connected to a medical clinical database. However, there are no medical records on this card, just basic ID information. The card links to information stored on a database at the hospital.
- The card is not connected to insurance coverage.
- This sort of system is easier to enact in a country such as China. In a democracy, you'd have to mobilize consensus in enacting such a system.
- Australia: integrating medical info on personal ID. Many people are concerned about patient privacy.
- Patient process: patient pays up front and then goes to the hospital
- Charity care: Every day at least one patient cannot afford to pay. Because hospital is government run, its job is to provide services to the people and they cannot turn patients away. If cannot recover costs, the hospital has to absorb a loss. They keep a record for uncompensated care and then report to the district government, and the government makes a decision on how to pay the provider. Hospital may cover a small proportion but the government pays most of it.
- Total expenditures: 320 million Yuan only for clinical income
 - Uncompensated care: 400,000 – 500,000 Yuan
 - The district level reimburses 80% of care and the hospital only worries about 20%.
 - The government buys and pays for capital investment
- Wages different from monthly income
- 20 million Yuan goes towards wages of the staff and the government provides this
- NCMS impact on revenue income of the hospital: The impact is not that substantial. Rapid economic growth and income contribute to these mores. Hard to attribute income to NCMS.
- Unions do provide health insurance but this is considered more of a supplemental insurance. Have to be a member of the union and more reduced rates of premiums. Unions have the organizational



capacity so can easily provide benefits.

- Important to note that before any hospital provides charity care, social services are contacted first and only if they are unable to help, the hospital will provide the charity care.

Following that we visited a township hospital that provided mainly primary care. It was a large 6-story secondary care hospital with marble floors and plants lining the halls. We were led through the main floor and into a conference room in a smaller building behind the main hospital. There was a conference table with fruits and bottled water. We sat down and were served tea. Here are our notes from this facility:

Rural Beijing Primary Care Facility: Township Hospital:

- Staff of 71 individuals: 24 physicians and 11 nurses
- 20 beds
- More focus on public health and prevention
- Little need for IP services
- Population of 52,000 individuals (combination of urban and rural population). ½ engage in agricultural activities
- Within the catchment area, there are 52,000 migrant workers. Possibly between 40,000 – 100,000 and even much greater than the resident population
- 23 villages under this township hospital
- 8 natural villages have been eliminated in the area and are in the process of urbanization. Means that land occupied were taken over by other industries. There has been an invasion of other industries (other than farming) and so the population can no longer engage in agriculture. In the process of rapid urbanization, this population will no longer be covered by NCMS but will be covered by residential insurance in urban areas. If they have jobs, they will also be able to apply to employer sponsored insurance.
- Farmers have been displaced by urbanization and the government compensated them for the land they lost.
- Once a household is no longer classified as agriculture, they are not eligible for NCMS.
- What constitutes urban? 1) population density, 2) composition of the industry
- Urban residents as weekend farmers are still urban
- The Huko changes when going from rural to urban
- Utilization: 120 OP visits per day
- There are 6 clinic villages under this hospital. Each clinic has around 40-60 visits per day.
- This hospital is a remarkable example of population based health. Changed the ways of how township hospitals work. Prior to 2006, the township was responsible for its own revenue generating business model. The government provided little support, but not very much.
 - The 2006 New Reform Launched: Revenue generated turned over to the district hospital. Risk is no longer borne by the township hospital. The government steps in to carry financial risk.
- Overall clinical income (of 6 township hospitals) is gross 5.8 million Yuan/year (and this is turned over to the district office) and 60% of the income is generated by Rx.
 - Net Income generated: 2.4 million Yuan
 - Includes income from medications
 - Total annual allocation from government is 3.15 million Yuan
 - In other words, their allocation from the government is greater than the revenue they generate on their own; they benefit from the redistribution program.
 - Very Innovative Scheme: There is no longer a profit margin built into the pricing of the drugs. Previously, only way physicians can earn money is by prescribing drugs, but now the incentives are different because the revenue generated is turned over to the government. Thus, there is no more economic incentive here to over-prescribe drugs.

- Under new system, the money is turned over to the district hospital, which would assure the salaries of the staff. The government removed the incentive to generate the revenue through drug sales and acts in a redistributive manner. Clinical income with village centers is 5.8 million yuan. All profits are turned over to the government, which redistributes funds to clinics based on need. There is therefore no profit margin that is built into the sales of drugs. By extension, there is no longer an economic incentive to sell the [unnecessary amounts of] drugs. The separation of clinical income from the budget allocation is only implemented at the primary level. There is still an economic incentive at the secondary and tertiary levels.
- There are 3 levels of hospital structure for Rx
 - Started in 2006 and only implemented at 1st level facilities. The 2nd tertiary hospitals are still under the old system. SO, at these facilities there is still a huge economic incentive to over-prescribe drugs
 - Primary care facilities want to implement population based medicine
 - 2nd tertiary: View is that market mechanisms really do work.
- under Township, there were 23 villages; but 8 of them were turned into urban areas
 - used to be only rural, but now is classified as a mix of rural and urban
 - the urban vs. rural distinction is determined by:
 - 1. Population density
 - 2. Type of industry present (farms vs. factories)
 - so changing of designation is determined by industries taking over land of the village, thus making it urban
 - the new urban areas would then be covered under the urban residential plans and not the NRCMS
 - the individual contribution in the urban areas is greater, so more of a burden on the people (but, likely their wages are higher)
 - displaced farmers: get compensated by govt., then they look for another job
- Average physician salary
 - 3 years of experience: 3000 Yuan (2000 basic wages and 1000 performance bonus) per month
 - Average Dr earns 300Yuan per month with 100Yuan bonus. End of year bonus is determined by performance and patient satisfaction.
 - Typical Annual bonus: 2.7 months of total income, 8400 Yuan.
 - Annual bonus allocated by rank, performance, and position
 - Annual bonus is linked to 1) rank, 2) seniority, and 3) position
 - Content of performance evaluation: consists of the following – 65% of implementation of public health activities
 - 1st level (township): primary function is still public health
 - Performance evaluations are done by 5 community health clinics and are periodically done by a team of someone in public health and the finance team comes up with a score
 - There are different layers of administrative structure
 - District Public Health Bureau allocates funds for bonuses for township hospitals
 - The higher level of government only worries about macro-allocation, but doesn't need to know the performance of individuals.
- The Shinyu district of Beijing used to be a county. The district is more urban and county is considered more rural. The designation to district changed in 1998.
- There are 400 villages under the Shunyi district
- Village health clinics are available in 200 villages. Areas with no health clinics, there exists a village health office (not being supported by government as much as other clinics)
- Now it is a mixed urban and rural system.
- There is a plan to incorporate village health offices into the health clinic system. Different

economic systems.

- Physician training
 - 30% of health care professionals are trained at a college based medical program (5 years beyond HS)
 - 70% are trained in a 3 year program beyond HS
 - There has been a vast improvement in training over the last few years
 - Income decreased due to the new model implemented in 2006
 - Prior to model, system was a “more you do, the more you make” NHS in UK versus the previous fee for service model.
- Urban coverage: belongs to social services so hospital doesn’t have information on uninsured and charity care
- Trends for rapid urbanization: If there’s very little rural population left, there will be a shift away from township hospitals. Township hospitals are currently service providers in rural areas and if this district becomes 100% urban, there will be community health centers, not townships.
- Important: They are not worried about insurance at all.

Our final destination in the rural area around Beijing was a village health station. Our van turned off a neighborhood road with small houses and shops and passed through a gate into a small square courtyard area. Near the entrance to the clinic there were some school children running around and playing ball. We went into the clinic, which consisted of one hall with some chairs and windows looking onto the courtyard on one side and doors and a pharmacy area on the other. There were seven doors in all, and each had a sign with Chinese and English words. They were labeled as follows: Treatment Room, Disinfection Room, Inspection Room, Watching Room, Healing Room, and Family Planning & Consultation Room. There were a few posters and plants along the walls. We met the doctors who worked at the clinic and discussed health care with them. Here are our notes:

Rural Beijing Primary Care: Village Health Clinic

- Assuming everyone here is covered under RNCMS
- Staff of 8 (3 physicians, 2 pharmacists, 2 nurses)
- Catchment area: 4200 residents plus 5000 non-residents. Responsible for 9000 residents
- Utilizations: Average daily OP visits: 40-50 to 70-80 , plus 2-3 house calls/day (mostly for elderly)
- Physicians also make house calls every day. For elderly patients who are unable to come to the clinic
- Open 7 days a week
- 600,000 Yuan is the gross revenue: 80% of this revenue is Rx
 - Allocation is part of the township hospital
 - 360,000 is the hospital’s allocation



- Clinical revenue generated: 120,000 Yuan
- Government provided 240,000 Yuan because revenue cannot be generated through public health (family planning, immunizations, etc.)
- Capital investments are separate from other costs – this doesn't include depreciation borne by the government

Monday May 12 2008:

We arrived in Shanghai and after checking into our hotel we visited the Shanghai Academy of Social Sciences (SASS). There was a familiar feel to the facility. It was in a very modern, academic-looking building that could have passed for a university building in Ann Arbor. The halls had wood paneling, off of which doors open onto professor offices, conference rooms, lecture halls, etc. We met Bingyang in one of the rooms, and after a short time we were served tea and were introduced to Sunyun Hu, a professor. She gives an introduction to HC in China:

- china's a big country, she's an expert on the Shanghai system.
- Current system has been around for past 20 years, replaced GIS LIS, with Residence Insurance System (beginning in 2007)
 - there are 18 million people in shanghai, 6 million migrants, 4 million of them hae jobs
 - Comprehensive Insurance System covers migrants, contributions come 100% from employers, there are labor contract laws that stipulate this, but it isn't backed by any sort of threat of fine or anything.
 - began in 2001, covers around 3 million migrant workers. the other million are employed in the informal sector and might not have coverage through the insurance schemes.
- Shanghai's system follows cent. gov.s plan, but differs in contribution rate. Contributes 14% of wage, to make up for fact that hc is more expensive in shanghai
- catastrophic insurance (included in city's plan?)
- covers all people who have jobs in city.
- special insurance for rural migrants, covers hospital costs, accident
- cooperative medical system was maintained in shanghai, whereas it was stopped in most other areas with the rewired funding deal.
- 98-99% of people living in city have hukou.

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- Before economic reform, the GIS system was used. They moved to a new health system where there was a pooling fund for individual accounts
- Shanghai consists of 4 central governments and there are differences in the contribution rates. For the **whole county**, average contribution is 8% of the wage rate. The contribution rate could be as high as 12-14%. It can be this high because the health expenditures are extremely high in comparison to the rest of China
- 12% is general expenditure and the 2% is for catastrophic expenditure **or coverage**
- The new system covers all people in an open city who have formal jobs
- Comprehensive system and accident in a hospital
- Residential insurance established end of last year
- In Shanghai, the Rural Cooperative Medical Scheme from the 1970s never stopped
- The insurance currently covers everyone (close to 98%-99%)
- Individuals over 70 years of age are full covered
- Gradually over the years, migrant workers have been able to get comprehensive coverage
- Of the 18 million populations in Shanghai, there are 6 million migrant workers. 4.8 million people are labor workers and have jobs, and more than 3 million have been covered by

comprehensive insurance. The employer has to pay because this is a mandatory insurance. 1.8 million people don't have any insurance because they are employees of the informal sector or are self-employed.

- Employers are also linked with the Social Security Bureau. There doesn't seem to be a fine or punishment if the employer doesn't provide employees with insurance. There have been new labor contract laws and every employee should have a contract with the employer
- There is accidental coverage available for migrant workers.
- The Shanghai system has followed Singapore's system as a benefit design
- The central government found that individual accounts are not a good idea. There is separate money to everyone so it makes no sense.
- changes are still going on that will allow for coverage of more people
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- The Shanghai system has followed Singapore's system as a benefit design
- The central government found that individual accounts are not a good idea. There is separate money to everyone so it makes no sense.
- More than 7 million people in Shanghai are covered by employer sponsored insurance
- One of the cost-containment strategies for hospitals is the Global Budget for hospitals set by the Health Insurance Bureau. Every year, they set a budget for each hospital and it is based on revenue/income from previous years. Dr. Hu stated that the Global Budget was pretty useless.
- In every large hospital in Shanghai, 50% of the residents are not from Shanghai
- One of the improvements that need to be made is that quality needs to be improved and there are too many cues for the hospital.
- most facilities are public. there are a few private hospitals, but they are not competitive,
 - all best biggest hospitals are public, but they're often inefficient, and have low satisfaction rates
 - gov doesn't really encourage private hospitals
 - "they only want to make money, their behavior conflicts with social interests."
 - private H looks nice, dr is nice, but its ahrd to say if the service is better
 - Chinese have a belief that good Hs are public.
 - gov has tried to work with Taiwan H company to set up private H, but the project was unsuccessful.

- physicians:
 - they're employed by the hospital, pay is based in part on how long you've been working
 - physicians feel that they make more money at private H, but loose out in prestige, networking, career advancement opportunities because "private H is too small"
 - how do they compare with other professionals in china? income is lower for new phys, experienced drs have special titles, better income. famous Drs get invited to work at other hospitals as guests, they'll get paid at these H, which will increase their income
 - often med school isn't their first choice.

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- overuse: it's too easy for people to see doctors (esp retired, who's coverage rate is higher), so doctors don't have the time to spend on each patient. "old people have chronic disease, like going to hospital. They always just want to get medicine."
- chinese med. is being used less and less, because it's profit margin is very low. H makes more money from western meds.
- people say that H offering TCM will not survive. Hs are switching to western med.
- gov trying to encourage more tcm, covering it through insurance, but the price is still low, so there's no incentive for H to offer it.
- tcm takes time to work, most younger people feel they don't have the time to get massage and acupuncture etc. they want western med. that's going to have an immediate effect.
- more use of equipment, docs make the case that more use of equipment will improve quality. difficult to get research on how effectively equipment is being used.
- drs run hospitals, aren't thinking about health economics in their decision making
 - New insurance schemes for migrant workers: benefits will be expanded. It currently doesn't cover OP services
- Dr. Hu's perceptions are that quality in China is not as high as the U.S. There is too much use of equipment in China
 - Most significant problem facing the Chinese health system: According to Dr. Hu, it is to control health care costs.
 - Given the health expenditure, the current health insurance funds will not be enough to cover

these overall costs. Hospitals use more and more equipment. More items need to be covered by insurance. A lot of people will use services not on the coverage lists. Although the global budget is used as a cost control mechanism, the trends are not so good.

- global budget is an attempt, but it's not addressing all the issues, health insurance fund will not be enough. (insurance schemes also include cost sharing)

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- insurance is not enough to cover costs of services
 - more use of technology, raises costs
 - drs make money through Rx
 - no gatekeepers, people can see whomever they want, coverage rates are comparable for seeing a specialist, etc.
- “the cent. gov. should have a central plan for what to do about migrants, so that shanghai could work with migrants as part of an organized plan, but this doesn't exist.

After the presentation and discussion we visited a large secondary care hospital called Lu Fen. The hospital was clean, brightly lit, and busy. It specialized in elderly care, and provided a range of traditional therapies in addition to the western medicine. These are our notes:

**Shanghai Urban
Primary/Secondary Care
Hospital: Lu Fen
Community Health Clinic**

- There are 3 levels of the health system in Shanghai
 - Primary (*)
 - Secondary
 - Tertiary
- Focus of this clinic is on chronic diseases, but not on severe cases
- Target population: 70,000 people
- Responsibility is public health, both communicable and chronic diseases
- 150 beds, occupancy is nearly 100%
- 150 staff (70 physicians and 80 nurses)
- The hospital services are quite comprehensive
- The government standard is that for every 30,000 people, there needs to be one of these health centers available
- There are 228 primary centers like this in Shanghai
- Districts with populations of more than 10,000 needs to have one of these centers
- Target goal is to have a hospitals within 10-15 minutes of all residents
- Financing: 90% of the revenue comes from the municipal government and 10% is generated from OOP, insurance, and clinical income.
- Less than 10% of revenue comes from Rx drugs
- 90% of patients have health insurance. The 10% of patients who are not covered must pay out of



pocket.

- The insurance coverage is different in Shanghai than in Beijing and Tianjin. The major difference is that more people are covered under insurance in Shanghai.
- Utilization: There are 460,000 patients per year
 - Highest: 3200 patients
 - Lowest: 1500 patients
 - Majority of visits here are OP
- Hospital uses a records card that covers all hospitals in the Shanghai district
 - each hospital has access to the information they enter into the patients record, and the CDC can access all of the patients records.
- The government encourages education of generalists
- There are two different functions of the hospital: 1) primary care, and 2) public health. The hospital is trying hard to integrate these services.
- New System
 - Covers medical history of patients and uploaded onto a computer system
 - More than 20 categories of disease
 - The CDC is in charge of all the systems. Each hospital can access their own information but the CDC can access all of the hospitals' information
 - System is 5 years old (2003)
 - Nearly all 228 clinics in this district have this system
 - The card only contains basic information
 - A city wide medical electronic system is underway
 - Yung –Li: contact in Shanghai, she works on research with the physician in this hospital
- In Shanghai, aging is a primary concern
- There is an existing relationship with Howard Hughes/Houston
- Traditional medicine is mainly supported by the government
- Physician salary:
 - 50,000 Yuan (salary + bonus) is the average
- Deductible
 - 700 Yuan, 10% is paid out of pocket
 - Non-residents have to pay out of pocket and try to get reimbursed by their home county health systems.
- The hospital combines western and traditional treatments. The elderly use TCM more than younger patients who prefer meds which act quickly (TCM treatments tend to take more time to be effective)
 - there is an entire floor dedicated to TCM.
 - There are people having massage, acupuncture, and undergoing traditional diagnostic exams.
 - There is a TCM pharmacy preparation room, in which herbs are mixed into teas, packaged, or ground and put into capsules.
 - The government subsidizes TCM to encourage hospitals to keep using it.

Our final visit was to a large medical complex called Rui Jin Hospital. There were a number of medical buildings surrounding a garden area with benches, flower beds, and a fountain. The medical campus was built around a 100-year-old French child and maternity hospital. We walked to the main hospital building; a 22-story glass and steel building, and were shown around the various wards. Here are the notes we took during our tour:

Urban Shanghai Teaching Hospital: Rui Jin Hospital

- 3rd level tertiary care hospital, one of the best hospitals in Shanghai
- 1800 beds
- 1000 physicians and 2000 nurses
- Exclusive medical care for VIP
- Also a teaching hospital with 900 students
- 40 to 50 operating rooms
- Specializes in general surgery, burn treatments, endocrinology, hypertension, gastrology, hematology (very famous at this hospital)
- French style influence in the buildings
- Almost 100% occupancy
- Hospital is trying to expand but there are challenges
- 7000 – 8000 daily OP visits
- ALOS: 11 days
- 60% are residents of Shanghai and have insurance. 40% are not residents of Shanghai and do not have any form of insurance.
- Hospital covers catastrophic coverage for everyone
- Deductible: 700 Yuan
- Waiting time is computerized for patients
- Internal revenue is mostly generated from some form of health care including out of pocket payments, diagnostics, or insurance.
- Doctor seemed unclear about revenue generation
- Appendectomy costs: 4000-5000 Yuan
- Patients are not turned away at this hospital and the hospital takes a loss. The amount of charity care provided at this hospital is very small
- The majority of the non-residents (40%) are coming to this hospital for special treatment and services since this is a tertiary hospital
- Target population is very hard to measure here
- One explanation for rural residents coming to this hospital is that they may sell all their assets to come for treatment at this hospital
- Most of the revenue at this hospital is generated from diagnostic services
- Chinese traditional medicine is a line of service that is operating at a loss
- New Rx system implemented several months ago
 - Total price of drugs should not be higher than 180 Yuan. The government controls all the prices no matter if it is covered by the insurance or not.
 - Due to this system, there is not much incentive to over-prescribe.
 - Although price can control incentive, the quantity prescribed still continues to be a problem



