Thai Healthcare Scheme in Financial Trouble

Ten months after its launch, a state-run healthcare program in Thailand appears to be running into dire financial straits as people take advantage of cheap medical facilities.

For 30 baht (US$0.71), or the price of a bowl of noodles, pregnant mothers can now deliver their babies at state hospitals and cancer patients can receive expensive chemotherapy treatments. For the same charge, Thais can also go to government dental clinics, take a medical test or have their hearts and other organs checked.

It all sounds like utopia, but the jury is still out on Prime Minister Mr. Thaksin Shinawatra’s controversial policy to cap medical fees at 30 baht per hospital visit. One of the first signs that the scheme — the boldest welfare plan ever conceived in this country — could be running out of steam is the reluctance of some hospitals to join.

Skeptics, including hospital administrators, have expressed concerns over the sustainability of the program, given the huge government subsidies involved. Many state hospitals are reportedly struggling to cope with the scheme, having had massive drains on their finances since it began last April.

Without fresh funds — about 70 billion baht (US$1637 million) is required annually — there are fears that the quality of healthcare could decline. There are already complaints of sub-standard service in some hospitals and allegations of discrimination from AIDS and kidney failure patients who are not covered by the scheme.

The government, which owes much of its popularity to this program, is expected to find more funding, including possibly dipping into the Social Security Fund, which has accumulated about 100 billion baht (US$2.367 million) in contributions from employers and workers.

While many Thais support the medical subsidy, they believe that there are still many wrinkles to be ironed out. A government doctor said that the government is giving people the wrong message that 30 baht can cure all illnesses. He said that the scheme should be restricted to poor people with life-threatening illnesses. Rich people should be removed from the program to enable the funds to go to the most needy.

The scheme should also be extended to anti-retroviral drugs for AIDS patients and dialysis treatments for those suffering from kidney ailments, but annual health checks and maternity treatments should be excluded.

Citing reports of overcrowded clinics and hospitals that have stopped prescribing imported medicines to cut costs, the doctor expressed concern that the quality of healthcare has been compromised. Currently, the 30 baht medical scheme is open to all Thais who register with an approved hospital near their homes or workplaces.

Research News

China to Participate in Worldwide Sleep Survey

More than 10,000 people in Beijing, Shanghai and Guangzhou will participate in a worldwide survey on sleep and insomnia. This is the first time that China is taking part in events sponsored by the International Foundation for Mental Health and Neuro-Science.

To help people know more about the importance of sleep and insomnia, the foundation and French company Sanofi-Synthelabo have jointly initiated the Worldwide Sleep and Health Project and set the International Sleep Day on 1 March every year.

Prof. Li Shunwei at Beijing Union Medical College Hospital said that over ten percent of the population in industrial countries suffers from insomnia. A survey conducted by the Shanghai Traditional Chinese Medicine Hospital shows that more than 15 percent of Shanghai citizens are troubled by insomnia. Experts pointed out that insomnia is a disease that should be treated based on particular causes.
Indian Institutes to Research on Type-II Diabetes

The Madras Diabetes Research Foundation (MDRF) of Chennai and the Indian Institute of Science (IISc) at Bangalore are embarking on a five-year collaborative research study on the genetics of diabetes and insulin resistance.

The research study will investigate the sequence polymorphism of several susceptibility genes in families known to have a predisposition to Type II diabetes.

The study is significant as India is estimated to have 19.5 million diabetics — the largest number for any country in the world. Diabetes is of two types: Type I, where the body produces insufficient insulin; Type II, where insulin is produced, but the body is resistant to it. Type II diabetes is far more prevalent and accounts for more than 90 percent of diabetic cases worldwide.

The research study will investigate the sequence polymorphism of several susceptibility genes in families known to have a predisposition to Type II diabetes. Expression profiling of insulin responsive tissues will also be undertaken. This will throw light on the cause and etiology of Type II diabetes.

Earlier studies had suggested that there could be a genetic susceptibility in the Indian population to Type II diabetes. In a pioneering study, Dr. V. Mohan, director of MDRF had established that Indians were more insulin resistant than European populations.

MDRF has recently undertaken a large epidemiological study called as the Chennai Urban Population Study where several thousand diabetic and non-diabetic subjects are being studied. This will provide a unique database for this research. IISc has built up infrastructure and expertise including micro array techniques for genetic scanning.

Clinical Testing Scheduled for Korea’s First AIDS Vaccine

The Korea Food and Drug Administration will soon approve clinical trials for the country’s first AIDS vaccine — GX-12 — recognized as a safe and effective vaccine treatment for AIDS in overseas experiments. GX-12 is a synthesis of AIDS virus genes and interleukin-12 mutant, a substance that stimulates immune functions in the human body.

Previously, the vaccine has passed safety tests in clinical trials involving 20 AIDS patients in Ukraine, as well as in an animal test in the US involving a chimpanzee whose DNA structure matched that of a person by 98.6 percent.

Prof. Sung Young-Chul of Pohang University of Science and Technology plans to spearhead the approval process in April 2002. If approved, this would mark the first time that an experimental AIDS vaccine or medicine is tested on patients in Korea.

Korea Joins International Pig Genome Project

Korea’s National Livestock Research Institute (NLRI) has recently announced the country’s participation in the international pig genome project. Denmark and China first launched the project in 2001 with initial funding of US$80 million and the goal to complete the sequencing by 2005. So far, using four pig species from Denmark and one from China, about ten percent of the pig genome has been analyzed.

Under the terms of the agreement, NLRI will be making a five percent equity investment plus bear annual research costs of 1 billion won (US$760 000).
New Zealand Varsity Working on Tasty Food with Low Fat Content

Low-fat milk that tastes like full cream; low-calorie ice cream that tastes like the real thing and fat-free cheese that does not taste like chalk. Improved taste and texture in low-fat products is one outcome of the research that has the potential to further boost New Zealand’s multi-billion dollar food industry.

A team of internationally renowned scientists led by Prof. Harjinder Singh from the Institute of Food, Nutrition and Human Health at Massey University is collaborating with researchers from the New Zealand Dairy Research Institute to look at how foods are constructed at different levels, and studying how proteins, fats and other molecules interact together in different environments. Their aim is to find ways to create novel foods and food ingredients.

New Zealand has an international reputation at the leading edge of food research, especially with dairy-based foods. Prof. Singh said that trends in the food market drive the need to focus on the development of new functionalities in food products based on understanding of the relationship between food and health, sensory quality and food structure, and food structure and processing.

Such an approach has already been demonstrated through fat replacement by protein and polysaccharide in yellow spreads that still look and taste like butter.

Nutraceuticals and the functional foods industry are experiencing unprecedented growth as increasing numbers of consumers learn about the health benefits of these emerging products. Manufacturers are under intense pressure to develop nutritious and/or health products without sacrificing flavor, texture or quality.

Prof. Singh noted that most of the bioactive ingredients, present in food materials or isolated from other sources and then added into a food product, are generally sensitive to processing and environmental conditions that exist in food systems and can adversely influence the sensory properties of foods which are important to the consumers.

One of the greatest challenges for the food industry is to develop food products, containing bioactive ingredients, without sacrificing flavor and texture, while maintaining its bioactivity in a food product through its manufacture and subsequent shelf life.

He said that they are developing new delivery systems as methods of protecting bioactive ingredients, using food biopolymers (e.g., proteins, liposomes, and polysaccharides). The longer-term target is to design suitable target-delivery systems that will allow the active ingredient to be made available at a desired site and time at a specific rate.

Singapore University to Develop Eye Operation Software

Junior eye surgeons in Singapore will be able to practice on a computer-generated eyeball in virtual reality if new software being developed by scientists is a success. A team of scientists from the Nanyang Technological University (NTU) is creating computer software which will allow medical students and junior ophthalmologists to carry out simulated eyeball operations before they work on the real thing.

Assistant Professor Cai Yiyu said that eye surgery software is available in the US, but does not focus on Asian eyes. That is why the team from NTU decided to create its own cheaper, independent software. If the team’s dream comes to fruition, surgeons will use virtual reality gloves to manipulate computer-generated surgical tools and operate on an image of a human eyeball.

The team hopes to incorporate simulated eyeball models of all races in Singapore. It will program in the diseases and conditions which afflict Asian people. The eight-month-old project has a long way to go before the software can be used in hospitals. But the team’s members including mathematicians and computer

Scientists and researchers are looking at how foods are constructed at different levels, and studying how proteins, fats and other molecules interact together in different environments.
research news

scientists said that their software will not become out of date. They will adapt it as technology advances.

Assistant Professor Cai said that traditionally, trainees practice using animal eyeballs, but there are problems with these. Animal eyeballs are expensive and can only be used once, so if there is a mistake, fresh eyeballs have to be used. Also, animals do not suffer from the same diseases as humans.

Revolutionary Heart Device Introduced in Singapore

A Singaporean heart patient has recently become the first in Asia to have a revolutionary medical device placed in his heart. The device, called the Sirolimus drug-coated stent, is virtually unheard of in Asia, but has had rave reviews in the US and Europe. Regarded as the next big thing in heart surgery, the new stent has addressed the problems of its predecessor.

Stents support plaque-damaged artery walls after a blockage has been removed in an angioplasty. But as many as 30 percent of patients with stents experience a re-narrowing of that area, probably from the build-up of scar tissue. In diabetics, this happens in up to 70 percent of patients. In such cases, the stents might have to be replaced.

Unlike normal heart stents which can be affected by re-narrowing within six months, the new stent has been known to prevent such an occurrence for a much longer period. A clinical trial in Europe found that after six months, all patients treated with the Sirolimus drug-coated stent had no evidence of a re-narrowing of the artery, compared to 26 percent in the group using a normal stent.

The new stent is coated with an antibiotic that is released slowly to prevent scar tissue from forming. Dr. Heng Chew Kiat, a research scientist at the National University of Singapore’s (NUS) department of pediatrics, said that tests using this device will be more than ten times cheaper than a normal lab test. The two men are part of a team of more than 20 scientists, engineers and technologists from IME, the NUS and the Nanyang Technological University working on the project. The team hopes to be able to find companies or investors to start commercial production of the mini-lab in a year.

Prof. Lim Yean Leng, director of the National Heart Center, said that the stents showed remarkable results with almost-unbelievable efficacy. The new stent costs US$2100, pricier than normal stents that cost US$550-700. Prof. Lim said that it would take another three to five years to know if this technique is good in the long run. About 2000 angioplasties were done in Singapore last year and in 86 percent of them, stents were used.

The test kit is made up of a series of computer chips fitted with miniature electronic components that have the test chemicals built into them. Each chip will be smaller than a postage stamp.

The test kit is made up of a series of computer chips fitted with miniature electronic components that have the test chemicals built into them. Each chip will be smaller than a postage stamp. The chips extract, make copies of and detect DNA. Within minutes, they can filter the white blood cells from a tiny drop of blood, extract the DNA and analyze it. All it needs is a pin prick of blood, compared to conventional methods, which usually call for the doctor to draw a syringe-full.

Singapore Scientists to Develop Chip Lab

Family doctors may soon be able to analyze a patient’s blood for diseases or to tell if he is allergic to drugs, all within the clinic itself. Researchers in Singapore are devising a small portable test kit, which will allow blood samples to be analyzed in minutes, without the need to send them to a laboratory.

Dr. Victor Samper, a technical staff member at Singapore’s Institute of Microelectronics (IME), said that this is made possible by miniaturizing the laboratory onto a chip. Dr. Serruys, an international leader in the field of angioplasty and stenting at the Interventional Cardiology Department at the Eramus University, Rotterdam, was recently in Singapore for a four-day conference on Live Interventions in Vascular Endotherapy, organized by the National Heart Center. Speaking to the conference, he pointed out that this could become the new standard.

The new stent is coated with an antibiotic that is released slowly to prevent scar tissue from forming. Prof. Patrick Serruys, an international leader in the field of angioplasty and stenting at the Interventional Cardiology Department at the Eramus University, Rotterdam, was recently in Singapore for a four-day conference on Live Interventions in Vascular Endotherapy, organized by the National Heart Center. Speaking to the conference, he pointed out that this could become the new standard.

Prof. Lim Yean Leng, director of the National Heart Center, said that the stents showed remarkable results with almost-unbelievable efficacy. The new stent costs US$2100, pricier than normal stents that cost US$550-700. Prof. Lim said that it would take another three to five years to know if this technique is good in the long run. About 2000 angioplasties were done in Singapore last year and in 86 percent of them, stents were used.

The test kit is made up of a series of computer chips fitted with miniature electronic components that have the test chemicals built into them. Each chip will be smaller than a postage stamp.

The test kit is made up of a series of computer chips fitted with miniature electronic components that have the test chemicals built into them. Each chip will be smaller than a postage stamp. The chips extract, make copies of and detect DNA. Within minutes, they can filter the white blood cells from a tiny drop of blood, extract the DNA and analyze it. All it needs is a pin prick of blood, compared to conventional methods, which usually call for the doctor to draw a syringe-full.
Research News

Taiwan Researchers Achieve Breakthrough in Transgenic Pig

A research team at the National Taiwan University Hospital (NTUH) has recently achieved a breakthrough in its cutting-edge research on genetically altered pigs.

The report was published in a recent issue of Transplantation, a world's leading academic publication in the field of organ transplants.

Dr. Li Chang-ming of NTUH, the first author of the report, said that they have created transgenic pig organs that could be used in the future for transplantation to humans, which had been impossible previously due to transplanted organ rejection between different species.

Dr. Li said, “A few years down the road, we are hoping to also use the kit to study how individuals react to different drugs, and tailor-make prescriptions that will work best for each patient, rather than giving them a generic drug. It could also be used to test for genetic diseases in unborn babies.”

That is not all. Associate Professor Lim Tit Meng, who is from the NUS’ biological-sciences department, said that genetic markers can be added to the device to light up when they detect viruses or bacteria, so the chips could be used in food and environmental monitoring. Testing of food quality could be done directly at customs points before being sent to the market. This would cut down on spoilage and storage costs while foods wait to be tested, and it also means fresher produce.

Singapore Clinic Offers Prevention Treatment for High-Risk Cancer Group

People who are at high risk of developing certain cancers, such as cancers of the breast, colon, and head and neck, can seek treatment at the chemo-prevention clinic of the National Cancer Center in Singapore.

The clinic’s program director, Dr. Sandeep Rajan, said that the drugs are able to either kill any abnormal cells patients may have or change those back to normal cells.

Breast cancer is the number one cancer among women in Singapore. Seven hundred new cases are detected every year and 250 women die from the disease annually. Tamoxifen is one drug used to treat the condition.

According to Dr. Rajan, studies show that if a woman who is at high risk of getting the cancer takes the drug for five years, it can reduce her chances of getting the disease by 30 percent if they take an aspirin-like drug for it. A form of vitamin A has a success rate of 50 to 70 percent in preventing abnormal cells in the mouth and throat from developing into cancer.

So far, 14 patients have been referred to the clinic. Four of them have been assessed as being at a high enough risk to warrant the preventive treatment, because they already have evidence of pre-cancerous tissue. They were referred by doctors who found discolored patches in their mouth or throat. These develop into cancer in 17 to 40 percent of the time, according to Dr. Rajan.

After six weeks of treatment with a form of vitamin A, the patches have cleared up in three of the four patients. “The drugs need to be taken for one to five years, to prevent all three cancers, so it is important for the patients to be able to tolerate these well. Then, they can lead as normal a life as possible,” he said.

While the drugs do have side effects, he added that it is important to balance these with the risk of getting cancer. Tamoxifen can cause an increased risk of cancer of the uterus, blood clots and high cholesterol levels. The vitamin-A drug can cause a rash and the aspirin-like drugs have been linked with bleeding in people who have ulcers. However, Dr. Rajan said that new drugs with fewer side effects are being developed.
of pigs to “trick” the human body so that it does not reject the “xenotransplants”. The team’s method of achieving this feat is different from that employed by British biotech firm PPL Therapeutics.

Dr. Li said that he could not tell from the literature which gene or genes PPL Therapeutics had removed from its pigs in order to prevent immediate organ rejection.

One of three types of organ rejection occurs after a transplant between species. Hyperacute rejection occurs as soon as the organ is placed inside the recipient’s body. Acute rejection happens three to five days later. If the delay is greater still, it is termed chronic rejection.

Dr. Li surmised that PPL Therapeutics has probably eliminated the genetic material of a xenoreactive antigen called alpha-gal, present in the bodies of all sub-primates but not in humans. If a pig organ is transplanted to a human, the human body would immediately detect the alpha-gal and reject the pig organ as foreign.

Dr. Li explained that researchers in Taiwan have also attempted previously to eliminate the genetic material in the pig’s alpha-gal antigen, but that PPL Therapeutics’ cloning technology is more advanced and produces much faster results.

Dr. Li explained, however, that there are limitations to PPL’s approach. While it solves the problem of hyperacute rejection, there are other differences between porcine and human antigens, and these can trigger acute and chronic xenoreactions later on. It will still be some time before anyone is ready to transplant pig organs to human recipients.

Porcine and human antigens behave very differently. There are differences even from one human to the next, which is why a screening process is required with organ and bone marrow transplants to match up donors with the appropriate recipients.

Transgenic pigs carrying human genetic material have been raised in Taiwan for the past four years by NTUH with the help of the Taiwan Pig Research Institute.

By introducing genetic material from human antigens into pigs, the NTUH research team is seeking to produce pig organs that will not be rejected as foreign after they are transplanted into humans.

Taiwan Cancer Vaccine Shows Promise

Academia Sinica has recently announced that a cancer vaccine made of a special molecule found in human saliva is well on its way to production.

Dr. Li Chun-hung, a scientist at Academia Sinica’s Institute of Biological Chemistry, said that his team is in the second year of a three-year study of the promising antigenic preparation.

The cancer vaccine is synthesized from a special protein and a type of molecule found in saliva. The unique saliva molecule resembles the composition of certain cancer cells, such as that of colon cancer and lung cancer. It could actually stimulate the production of antibodies inside the human body, providing immunity against the fatal illnesses.

According to Dr. Li, if everything goes well, the cancer vaccine could be in development as early as next year before being made into injections to be administered to patients for the prevention of malignant tumors.

At the same time, Dr. Jackie Peng-Wang of Academia Sinica, also a senior official with the Formosa Cancer Foundation, has announced that clinical trials for a liver cancer vaccine are underway at Taipei’s Chang Gung Memorial Hospital.

The researchers have modified the genetic makeup of pigs to “trick” the human body so that it does not reject the “xenotransplants”. Transgenic pigs carrying human genetic material have been raised in Taiwan for the past four years.

The cancer vaccine is synthesized from a special protein and a type of molecule found in saliva. The unique saliva molecule stimulates the production of antibodies inside the human body, providing immunity against cancer.

Dr. Peng-Wang said that Taichung’s Veterans General Hospital and National Taiwan University Hospital will also launch their own experiments on vaccines designed to prevent lung and intestine-related cancers. He added that it could still be a while before doctors could use vaccines to prevent the onset of cancer despite the series of promising breakthroughs.
Taiwan Applauds Breakthrough Bone Cement Treatment

A medical procedure that involves the injection of a “bone cement” is applauded by Taiwanese doctors to be effective in providing relief to patients suffering from chronic back pain caused by osteoporosis and other traumas.

Dr. Chuang Hou-li, a neurosurgeon at Linko’s Chang Gung Memorial Hospital (CGMH), said that the treatment, known as vertebroplasty, is a minimally invasive non-surgical procedure that uses the injection of the bone cement X, a chemical compound called PMAA X, to the damaged vertebral bodies of the spine.

Dr. Chuang said that clinically, vertebroplasty is done with doctors first taking X-ray pictures of the affected bones to pinpoint the trouble spots before they proceed to prepare the bone cement for injection. He stressed that due to patients’ conditions, their bone cement would need to be tailor-made to the right viscosity to avoid potentially fatal complications.

And as the chemical compound hardens in the injured bone minutes after the procedure, it could then work to fortify the fractured bone, helping it fuse together to keep from rubbing against the nerves whenever patients move. With pieces of the damaged bones no longer scraping at the nerves, patients would experience the alleviation of the pain caused by vertebral compression fractures.

Using the low-risk medical procedure, CGMH has successfully helped 54 patients (average age 70 years old) achieve various degrees of pain relief. A 90-year-old man, who became bed-ridden after he fractured his vertebrae from a fall, recently was able to walk again one day after the injection of the bone cement.

It is estimated that, each year, there are more than 60,000 Taiwan residents who suffer from chronic back pain caused by bone fractures in their spines that stemmed from osteoporosis due to aging. Before vertebroplasty became available, patients could only resort to bed rest or analgesic medicine to suppress the sometimes sharp and excruciating pain.

Ancient Chinese Recipe Good for Colds, Cancer

An ancient Chinese recipe has been given a new life in Canada, as part of an alternative medicine for cancer sufferers and those with immune system diseases.

The product “Ning”, being manufactured in the eastern Canadian province of Newfoundland, is based on a recipe using astragulus, a woody herb that grows in the mountains of Mongolia. Ning is the brainchild of Ms. Xianging Chang and Mr. Robert Trenholm. Ms. Chang went to Newfoundland to pursue a master’s degree in toxicology. She then joined up with Acta Herbs to develop her research into astragulus.

In carrying out their research, Ms. Chang and Mr. Trenholm started experimenting with different formulas. One day, Mr. Trenholm began coming down with the flu and decided to take the concoction he had made that day. He said that he was fine by the next day. Since then, the pair have stuck to that recipe. However, Mr. Trenholm pointed out that the flavor may take some getting used to, saying that concoction has “a kind of rooty, earthy flavor to it with a citrus background.”

According to Ms. Chang, astragulus is good at boosting the immune system, and the product works on everything from the common cold to asthma, arthritis and cancer. “We have a lady who had asthma for five years and was using a puffer and some hormone products, but after she started taking this, she never needed the puffer again,” Ms. Chang said.

In ancient China, the emperor and his family used astragulus because they called it a superb herb tonic. Ms. Chang said that the herb has also been used to treat people with kidney failure in China.

North Americans have been using astragulus since the 1970s. But it has been used in tinctures and caplets, which Ms. Chang noted are not very effective. The ancient Chinese infused the astragulus root with warm water, much like a tea.

Ms. Chang uses an herbal distribution company in mainland China to farm the astragulus. In Beijing, the active ingredients are dried into powder and packed into bags. Juice from sea buckthorn, a plant cultivated in Asia which is rich in vitamin A and C, is added to the mix.