Occupational Health Services at CSC
• **Reporter:**
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  KMUH intern, resident and fellow of GI surgery
  KMHH ER staff
  CSC clinic director
  e-mail: a2401@mail.csc.com.tw
CSC (China Steel Corporation), located at Kaohsiung, Taiwan, was founded in December 1971.

Annual production: around 10 million tons

CSC and its 21 subsidiaries constitute the “CSC Group” in five business areas: steel, engineering and construction, industrial materials, logistics, and services & investments.

Employees: 9932 (male: 9682, female: 250)
The former CEO said:

“Without safety, everything is zero.”

“Employees’ health is our most important property.”

We have been perfecting the safety and health system for years, and won the Safety and health excellence recognition award 2012 from worldsteel association.
SAFETY AND HEALTH EXCELLENCE RECOGNITION AWARD 2012

"Nothing is more important than the safety and health of people who work in the iron and steel industry"

China Steel Corporation

is recognised for excellence in its commitment and innovation in the pursuit of Zero – an injury free, illness-free and healthy workplace

Xiaogang Zhang
worldsteel Chairman

Edwin Basson
Director General

Henk Reimink
GM - Safety, Technology and Environment
I. Clinic
II. Health exam and follow-up
III. Occupational service at job sites
IV. Health promotion plans (fat burning weight loss plan, telemedicine)
I. CSC Clinic
Building
Departments

- Registration
- Emergency room
- Health exam and consulting
- OPD
- Pharmacy
- Laboratory
- X-ray
OPD service

- Family medicine
- Internal medicine
- Surgery
- Dentistry
- Cardiology
- Endocrine
- Hepatology
- Chest
- Psychiatry
- Dermatology
- ENT
- Ophthalmology
- Fitness
- Quit smoking
- Occupational medicine
- Nutrition and exercise consulting
Personnel

- 17 Doctors
- 14 Nurses
- 3 Pharmacists
- 6 Officers
- 3 Medical technologists
- 1 Dietitian
- 1 Exercise instructor
- Health exam team (15 persons from KMUH)
Registration
Dental OPD
Emergency room
Equipment

- AED
- Audiometry
- Automatic analyzer
- Bone ultrasonometer
- **Digital X-ray**
- Defibrillator
- ELISA
- EKG
- Inbody
- Pneumo tonometer
- Resusci Annie
- Respirator
- Slit lamp
- Spirometer
- **Ultrasound**
- Vital sign monitor
Digital X ray
Sterilizer
Our service

• First aid
• OPD, vaccination, blood donation
• Epidemic disease control
• Health exam: ordinary and special (chemical, noise, dust..)
• Occupation medicine service
• Health promotion, women’s health care, lectures, CPR training
Health consulting
Blood donation
II. Health exam and follow-up
Health exam items

- Past history, physical exam, waist circumference
- Eyesight, ocular pressure
- Hearing
- Chest X ray (PA + Lat.), EKG, lung function
- Abdominal sono
- Urine and stool routine
- CBC, GOT, GPT, GGT, BUN, CRTN, Uric acid, Cholesterol, **HDL, LDL**, TG, Na, K, Cl, Lead, HBs-Ag, Anti-HCV, T3, T4, TSH, AFP, urine cadmium, GFR
- Inbody, bone density
- Tumor marker (selective)
Health exam frequency

- < 30 Y/O : every 3 years
- 30-45 Y/O : every 2 years
- > 45 Y/O : every year
  (Average age: 50 Y/O)
- newcomer & expatriate
- seafarers
<table>
<thead>
<tr>
<th>Item</th>
<th>yellow</th>
<th>red</th>
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<tbody>
<tr>
<td>High BMI</td>
<td>24-35</td>
<td>&gt;35.1</td>
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<tr>
<td>Low BMI</td>
<td>15.1-18</td>
<td>&lt;15</td>
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<tr>
<td>High systolic p.</td>
<td>141-180</td>
<td>&gt;181</td>
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<tr>
<td>High diastolic pressure</td>
<td>91-110</td>
<td>&gt;111</td>
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<tr>
<td>Low systolic pressure</td>
<td>81-89</td>
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<tr>
<td>Low diastolic pressure</td>
<td>51-60</td>
<td>&lt;50</td>
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<tr>
<td>Hyperglycemia</td>
<td>100-250</td>
<td>&gt;251</td>
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<tr>
<td>Hypoglycemia</td>
<td>46-60</td>
<td>&lt;45</td>
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<tr>
<td>Anemia</td>
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<tr>
<td>Leukocytosis</td>
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<tr>
<td>Leukocytopenia</td>
<td>3.1-4</td>
<td>0-3</td>
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<tr>
<td>Elevated GPT</td>
<td>45-400</td>
<td>&gt;401</td>
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<tr>
<td>Elevated Creatinine</td>
<td>1.4-5</td>
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<td>Hypercholesterolemia</td>
<td>201-300</td>
<td>&gt;301</td>
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<tr>
<td>Hypertriglyceridemia</td>
<td>201-500</td>
<td>&gt;501</td>
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</table>
Health exam (I)
Health exam (II)
Health exam (III)
Major problems

• Metabolic syndrome
• Cancer
• Mental problem
• Infectious disease (TB, Norovirus…)

III. Occupational medicine service at job sites
Occupational health management

Plan
- Health risk assessment
  - Risk management
  - Health risk分级評估
  - Exposure evaluation

Do
- SEG identification
- Sampling planning
- Measurement execution
- Data analysis
- Improvement evaluation

Check
- Health exam
  - Job site service
    - Administrative management improvement plan
    - Work environment testing
  - Operational monitoring
    - Project shift health check
    - Health education
  - Personal protective equipment training
  - First aid

Action
- Study and analysis
- Hazard monitoring
- Disease control
- Health promotion
- Employee assistance program
- Job site service planning
- Site visit
- Worksite inspection
- Safety observation
CSC started CDA (Creative Development Activities) since 1980
Real time monitoring of high risk tasks
<table>
<thead>
<tr>
<th>Process</th>
<th>Risk of injuries</th>
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<tbody>
<tr>
<td>material</td>
<td>falling、twisting、hypoxia &amp; intoxication</td>
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<tr>
<td>transport</td>
<td>twisting、collision、sprain</td>
</tr>
<tr>
<td>iron making</td>
<td>twisting、collision、burn、hypoxia</td>
</tr>
<tr>
<td>steel making</td>
<td>twisting、cutting、burn、hypoxia</td>
</tr>
<tr>
<td>rolling</td>
<td>twisting、cutting、burn</td>
</tr>
<tr>
<td>fix</td>
<td>falling、electric shock、cutting、collision、sprain、burn、hypoxia</td>
</tr>
</tbody>
</table>
Environment monitoring

- Air-conditioning (all)
- Dust (W1, W2, W3)
- Lead (Y643, Y532, W65)
- Tetra methyl lead
- Organic solvate (T2-T6, W1-W6, Y4, Y5)
- Special chemicals (T1, W2, W5, W6, Y4, Y5)
- Radiation
- Noise (all)
- High temperature (W2-W5, Y4, Y5)
- Tunnel
Chemicals monitoring

• (TOP 5):

CO2    742
Dust   119 (W1、W2、W3)
HCl    36  (Lab、pickling、water plant)
Benzene 21 (W21、W25)
H₂SO₄  15 (W5)
Occupational Safety and Health Act
July.3.2013 Modified

• **Article 20** …The laborers are obligated to accept the examinations in Paragraph 1.

• **Article 21** The employers shall not employ laborers to engage in a particular type of work for which the physical examination in the preceding Article finds the laborers to be unsuitable for employment. Where a health examination finds an abnormal condition in laborers, medical personnel shall provide the laborer with health guidance…
• **Article 21** … Where the results of a physician’s health assessment indicate that a laborer is not suited for his or her original work, the physician’s recommendations shall be referred to in changing the laborer’s job sites, reassigning the laborer to different duties, or shortening his or her working hours, and adopting health management measures.
Abnormal health exam results in special workplaces (2012)

47 cases with abnormal health exam results in special workplaces were suspected occupation-related. (radiation: 1, chemical: 1, high temp: 1, noise 44)

They were reviewed by occupational medicine doctor, and the results showed no relation.
Case 1

# A contract worker with hypertension and CAD
# Hot rolling quality control unit
# Suspect high temperature environment
Hot rolling quality control
Assessment

# Environment: It is not a high temperature place according to the law.

# Job description: panel control in the office, 15-40 min check/roll, 8 hours/day, Max. 16 rolls/day

# Suggestion: no contraindication, keep good BP
Case 2

Some low back pain cases in the 2nd hot strip mill: coiling area, rolling area, hanging area
Coiling area

lubrication

cleaning
Roller exchange area

roller

panel
Hanging area

hanging

maintenance
Assessment

# Coiling area: lubrication and cleaning
# Rolling area: change the roller
# Hanging area: hanging and maintenance
# No long-time bending, no heavy lifting
# Suggestion: no relation
Other cases

- Parkinson's disease (bus driver), shifted
- DM with triopathy (crane operator), retired
iv. Health promotion plan
Fat burning weight loss plan
個人營養諮詢！

Y4健促專案
<table>
<thead>
<tr>
<th>主题</th>
<th>1 新陳代謝症候群飲食守則</th>
<th>2 均衡飲食的操作型定義</th>
<th>3 高脂血症飲食策略</th>
<th>4 血糖不耐飲食策略</th>
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<td>照片</td>
<td><img src="image1.jpg" alt="照片1" /></td>
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</tbody>
</table>
• (InBody) analysis
• Exercise instruction
• Flexibility
• Muscle power
• Cardiorespiratory fitness
• Nutrition education
• Speech
• Total Cholesterol, Triglyceride, HDL, LDL, AC-Sugar, HbA1c
• Follow-up
Achievement

- 2011
  300 participants, 511.7 kg
- 2012
  324 participants, 752.6 kg
- 2013
  246 participants, 715 kg
開關負擔・健康100 健康減重成果

發表會議程

開會時間：2007年10月2日 10:00

場地：新北市立體育館

講者：王文宏

主題：健康減重成果
Bureau of Health Promotion Prize
Call center at KMUH

Monitor at job sites
測量測

血壓: 107/69 (70) 99年10月21日 11:51
血壓: 68/9 (其他) 99年9月14日 12:8
Flu control policy

- Visitors and contract workers control
- Environment control
- Education
- Fever screen
- Vaccine and Tamiflu
Mt. Jade 3,952 m
Goal

- Health promotion and chronic disease prevention
- High quality health exam
- Telemedicine (early detection of heart attack)
- AED (1 set / 1,000 employee)
- Hearing protection plan