Health care
For Your Quality of Life
~To combat DIABETES in Saudi Arabia~

STEP 1: Prevention
STEP 2: Clinical Testing
STEP 3: Dialysis Treatment
Nikkiso Hemodialysis Equipments

Riyadh Business Seminar
February 19, 2013

NIKKISO CO., LTD.
Shigemitsu Ejiri
NIKKISO GROUP INTRODUCTION
Corporate Data

Company Profile (Consolidated Base)

- **HQ Address:** Ebisu Shibuya-ku, Tokyo, Japan
- **Year founded:** December 26th 1953
- **Listed:** Tokyo Stock Exchange (6376)
- **Capital amount:** JPY 6,544 mil
- **Employees:** 1,541 (Group: 5,185)
- **Financial Result:**
  - Turnover: JPY 90,137mil
  - Operating Income: JPY 6,580 mil

Key Description

- One of the leading manufacturer of precision pumps for chemicals
- A leader in water conditioning system for power stations in Japan
- **Top ranked in Dialysis machines in Japan**
- CFRP parts for commercial airplanes
- Development and manufacturing of medical equipment, active in the hemodialysis-related products
- #1 position in Japan for dialysis machines
Offices and Plants

- Hannover, Germany
- Shanghai, China
- San Diego, USA
- Taipei, Taiwan
- Bangkok, Thailand
- Ho Chi Minh City, Vietnam
- Hanoi, Vietnam
- Tokyo HQ
- Nevada, USA
- Philadelphia, USA

Global

Japan

32 Japanese domestic offices

Overseas Affiliate with Plant
Overseas Affiliate
Overseas Office

Shizuoka Plant
Higashimurayama Plant
Kanazawa Plant
Medical Product Plants in Japan

- Shizuoka Plant
- Kanazawa Plant
- Tokyo HQ
Global Medical Product Plants

Hannover, Germany

Weihai, China

Bangkok, Thailand

Ho Chi Minh City, Vietnam
Dialysis Status
Trends in primary disease of dialysis new patients by year in Japan

Data source: The Japanese Society for Dialysis Therapy
General Information of dialysis in KSA

Population: 26,250,000 (2010)

◆ ESRD Patient (End Stage Renal Disease)  11,500 patients
  • HD Hemodialysis Patient  10,500
  • Peritoneal Dialysis Patient  1,000

◆ Dialysis Centers  175 Centers

◆ Dialysis Units  4,000 Units
Dialysis Methods with Machine

① Single-patient dialysis system

One machine per patient.

② Central Dialysate fluid Delivery System (CDDS)

Consist of:
- Water treatment system
- Dialysate mixing system
- Multiple patient supply system
- Dialysis console units

Popular in Japan. (90%)
Dialysis System Diagram

*Automatic control

Tap water or Ground water

Reverse Osmosis Equipment

Pre-filter

Pressure pump

Dialysis Fluid Preparation Room

A Powder Mixing Device

B Powder Mixing Device

RO water Loop Pipe

RO water

A Solution

B Solution

Full Automatic Personal Dialysis Machine

ETRF

Full Automatic Personal Dialysis Machine

ETRF

Full Automatic Personal Dialysis Machine

ETRF

Full Automatic Personal Dialysis Machine

ETRF

*ETRF: Endotoxin Retentive Filter

*ISO23500 standard

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① Single-patient dialysis system

- One unit located bed side
- Nurses bring RO water and A/B solution to each bed
- A/B concentrate need to be prepared
Central Dialysate fluid Delivery System (CDDS)

- RO Water producing system
- Multiple dialysate supply system
- Dialysis console unit
- Automatic melting system
- Dialysis room
- Dialysis communication system

*Equipments are linked with LAN cable.*
<table>
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<tr>
<th>Advantage</th>
<th>Single patient system</th>
<th>CDDS (multi-patient dialysate supply system)</th>
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<tr>
<td></td>
<td>• Independent conductivity adjustment for prescribed dialysis</td>
<td>• Economical of running cost</td>
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<tr>
<td></td>
<td>• Quick preparation for emergent dialysis</td>
<td>• Supply system prepares concentrate for all machines</td>
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<td></td>
<td>• Isolable failure machine for maintenance</td>
<td>• Easy management of conductivity check and maintenance</td>
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<tr>
<td>Disadvantage</td>
<td>• Expensive running cost</td>
<td>• No independent conductivity adjustment</td>
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<tr>
<td></td>
<td>• Concentrate required for each machine</td>
<td>• All console units operation required</td>
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<tr>
<td></td>
<td>• Conductivity check on each machine is required before treatment</td>
<td>• Supply system failure affects all console operation</td>
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Central Dialysate fluid Delivery System (CDDS)

**System Features 1**

- Create a dialysis fluid ultrapure water. (Dialysis fluid without pollution)
- Simultaneous conductivity control of all dialysis machine.
- High volume on-line hemodiafiltration.
- Automatic cleaning of piping and hemodialysis machine in bulk.
Central Dialysate fluid Delivery System (CDDS)

**System Features 2**

Many ways to prevent contamination of the Dialysate

- Strict management or equivalent ISO standard
- Strict control of ETRF (Endotoxin Retentive Filter)
- Able to create piping material and structure
- Review and selection of disinfectant

*CDDS has no pollution problem* !!
Central Dialysate fluid Delivery System (CDDS)

Advantages

■ Efficient management dialysis.
  (Reduction of working hours)

■ Highly economical.
  (Reduce labor costs/ The use of dialysis fluid)

■ Prevention of human error.
  (Unification of the procedure / Simplification of operation)

Preventing medical accidents / Preventing infection accidents
Dialysis in Japan

CDDS

■ CDDS is a system that has contributed more than 40 years in Japan.
■ Successful in improvement of operational efficiency and cost effectiveness.
■ More than 80% installation (Hospital/Clinics)

*from 20 or more beds*

■ Initial cost  →  10–20% ↓
■ Number of patient ↑  →  Maintenance cost ↓
**CDDS is not available outside Japan!**

**Issues:**

1. Secure maintenance engineers
2. Know-how of Hospital/Clinic management with CDDS
3. Infrastructure – electricity
   - water/sewage line
Now we are offering

Kitasaito Hospital Package
Kitasaito Hospital Package – advanced CDDS

Central Dialysis Fluid Delivery System (CDDS) + Full Automatic Hemodialysis Machine

Design and management to prevent contamination of the dialysate

Consortium of Kitasaito Hospital and Nikkiso is promoted under auspices of Japanese Government
Overview of The KITASAITO Hospital

- **Address**
  - Asahikawa city, Hokkaido, Japan

- **Departments**
  - Urology
  - Nephrology
  - Vascular Surgery
  - Dialysis Center

- **Bed**
  - Inpatient care 116
  - Blood purification 115

- **Patient number**
  - HD ; 480
  - PD ; 60
  - HHD ; 2
KITASAITO Package

Features

Telemedicine
- Diagnosis
- Treatment support

Kitasaito Hospital

Your Hospital

Management
- Management of dialysis division
- Dialysis patient care

Training
- Patient education for PD introduction
- Nursing of Dialysis
- Clinical-Engineer Training

Dialysis treatment
- HD
- PD
- Home-HD
- Online-HDF

Information & Communication Technology
- Electronic medical record
- Dialysis schedule (Time/Bed)
KITASAITO Package provides solutions

- Trainings to doctors, nurses and engineers
- Instruction of management know-how

Kitasaito
Hospital

Secure maintenance engineers
Hospital/Clinic management with CDDS
Infrastructure – electricity – water/sewage line

Nikkiso
Thank you.