Results of a Health Insurance pilot for Garment Workers in Bangladesh

Einführung

Vortrag: Dr.PH Felix Roth
Prof. Dr. med. Niklaus Gyr

SOME COMPARATIVE DATA
BANGLADESH-SWITZERLAND
### Comparative Data Bangladesh – Switzerland

**Bangladesh demographic profile 2014**

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<th>Item</th>
<th>Bangladesh</th>
<th>Switzerland</th>
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<tr>
<td>Surface:</td>
<td>147 570 km²</td>
<td>41 285 km²</td>
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<td>Population:</td>
<td>166 Mill.</td>
<td>8.2 Mill.</td>
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<td>Growth rate:</td>
<td>1.6 %</td>
<td>1%</td>
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<td>Infant mortality rate:</td>
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<td>Death rate</td>
<td>5.6/1000</td>
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<td>Rural Population:</td>
<td>66 %</td>
<td>26</td>
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<tr>
<td>Population &lt; 15 years:</td>
<td>32.3 %</td>
<td>about 17 %</td>
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<td>Population &gt; 65 years</td>
<td>5 %</td>
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<td>Life expectancy, years</td>
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### Comparative Data Bangladesh - Switzerland

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<td>Per capita income/year:</td>
<td>1 190 USD</td>
<td>47 379 USD x 40</td>
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<td>GDP per capita adj. by PPP</td>
<td>2 991 USD</td>
<td>54 982 USD x 18</td>
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<td>Inflation rate:</td>
<td>6.5% (2015)</td>
<td>0.7% / 15</td>
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<td>GDP growth</td>
<td>6.1% (2015)!</td>
<td>0.8% / 7.6</td>
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GDP = Gross Domestic Product  
PPP = Purchasing Power Parity
International Centre for Diarrhoeal Disease Research
Bangladesh Mohakhali, Dhaka, Bangladesh
(former SEATO Cholera Research Laboratory)
Publications that appeared during the interlinkage program of scientific cooperation between the ICDDR,B Dhaka and the Department of Medicine, University of Basel, during the period 1989 to 2012
Prof. Niklaus Gyr

   Scand. J. Gastroenterol. 27, 253-256, 1992

   GUT 33, 987-993, 1992

   Lancet 341, 1274-1275, 1993

4. Bardhan P.K., Rahman ASMH., Islam S., Rahman M., Gyr K.: Effects of Tropisetron, a 5-hydroxytryptamine type 3 receptor blocker, on intestinal secretion induced by cholera toxin or deoxycholic acid in rabbits in vivo.

   Gastroenterology 135, 1534-1542, 2008
DIABETES ASSOCIATION OF BANGLADESH (BADAS)

BANGLADESH INSTITUTE FOR RESEARCH AND REHABILITATION ON DIABETES, ENDOCRINE AND METABOLIC DISORDERS (BIRDEM)

Founded 1956
Non-profit voluntary sociomedical service organisation
Patients served: about 1 Mill. reg. Diabetics or 20% of all diabetics in Bangladesh
Service Network allover the country
WHO Collaborating Center for Diabetes and Endocrinology (BIRDEM)
Bangladesh has achieved MDG 4

Between 1990 and 2012, under-five mortality decreased by 73 percent while neonatal mortality decreased by 50 percent.

Source: BDHS, UN-IAGCME- UN Inter-agency group for Child Mortality Estimation, 2013

Source of data:
Bangladesh Demographic and Health Survey
Ready Made Garment Industry Workers

- Represent a large workforce of 3 to 4 million people
- Belong to the poor population segment with a monthly family income of 150 Sfr in the city and 125 Sfr in the rural area (family = 4 persons)
- Largest foreign currency earner. Produces about 78% of foreign exchange
Results of a Health Insurance pilot for Garment Workers

Vorgetragen von
Dr.PH Felix Roth
Prof. Dr. med. Niklaus Gyr

Presentation Outline

1. Structure of the Pilot
2. Data & Results
3. Conclusions and Next Steps
MoU BGMEA with BADAS, signed in March 2013

...to provide health care to the employees with a comprehensive approach
Overall objective of the pilot

To increase health service coverage

- with improved disease prevention,
- immediate access to health information, and
- efficient cost control,

- through a health financing plan
- by testing the economic viability of a health insurance for industry workers.
Partners of „Third Party Payment Mechanism“ (TPPM)

- Diabetic Association of Bangladesh (BADAS)
- United Insurance Company Limited (UIC)
- The New Asia Group (NAG)
Insurance scheme at a glance

- Group health insurance for 8000 workers belonging to the lowest salary groups of 7 garment factories.
- Pilot duration: 1 year from 24. April 2014 onwards
- Inpatient and outpatient treatment covered by the insurance scheme
- Scope of benefits and limitations well defined
- Premium: 487.- BDT / year
- Annual coverage up to 15‘000 BDT / year
- UIC & NAG equally share benefits and loss
Four Innovations

1. Provider Call Centre:
   - Telemedicine Reference Center Pte. Ldt.
Medical Call Centre

- Immediate access to health information
- Gate keeping
Four Innovations (continuation)

2. Health Promotion Programme: offered by Bangladesh University of Health Sciences
Health Promotion Programme

Booklets & Videos on 5 Modules:

- nutrition
- hygiene, communicable & non-communicable diseases
- reproductive & child health
- occupational health
- financial literacy
Four Innovations (continuation)

3. Software handling the claiming and reimbursement process:
   - Telemedicine Reference Center Pte. Ldt.
MHI software for pilot

HEALTH MICRO INSURANCE

24/7 Health Care

Medical Centre
- BIRDEM
- NHN
- FACTORY
- NONE

Login As
- Admin
- Medical Officer
- UIC

User Name

Password

Login
Exit
View of the service provider
## View of the Administrator

### Claim

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View of the insurer

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Four Innovations (continuation)


(developed by SMCG, Dr. Rashidee and BADAS)

MSF (Médecins sans frontières) Clinical Guidelines

Diagnosis and Treatment Manual for Curative Programs in Hospitals and Dispensaries, Guidance for Prescribing

MSF extract version adapted to the Requirements of Outpatient Clinics in Bangladesh

with HMI relevant additions 31.08.13

19.6.2014
List of Coded Diagnosis linked with ICD - 10 code chapters

Example:

A  Symptoms and syndromes*, if not assignable to diseases listed under the headings B to W …… R00-R99

MSF Extract code used in HMI project
A1 Seizures
A2 Fever
A3 Pain
A4 Anemia
A5 Other symptoms or syndromes that cannot be attributed to the diseases listed under the headings below (specified in text form)

B  Respiratory tract diseases* (inclusive of nose and throat)………J00-J99
B1 Rhinitis and rhinopharyngitis (common cold)
B2 Acute, chronic sinusitis
B3 Acute laryngitis
B4 Acute pharyngitis
B5 Diphtheria
B6 Whooping cough ……upto group W
Demand Side Survey:

Comparison of factories with insurance vs factory without insurance

- Project Coordination Unit
- Insured employee
- Employer (New Asia Group)
- Health Insurer (UIC)
- Healthcare provider (BADAS, NHN)
- Demand side survey (ICDDR,B)

- Coordination TPP Mechanism
- Producing claims and controlling claim payment process
- Gate keeping
- Health care services
- Supporting claim processing
- Claim payment
- Premium payment
- Data
- Employment
- Training
- Evaluation demand side
**Structure and funding**

**Project Steering Committee** (UIC, New Asia Group, BADAS, TRCL, TA)

**Delegate of the Project Steering Committee** (CEO NHN/BADAS)

**SDC TA: Gyr & Roth** (SMCG, Swiss TPH)

**Project Coordination Unit**

**Healthcare provider** (BADAS, NHN)
- Health care services
- Supporting claim processing
- Claim payment

**Health Insurer** (UIC)
- Premium payment

**Insured employee**
- Employment

**Employer** (New Asia Group)

**Telemedicine** (TRCL)
- Gatekeeping
- Data

**Health Promotion Programme** (BUHS)
- Training
- Evaluation
- Demand side survey (ICDDRB)

**Local funding**

**Swiss funding**

**External financial support:**
Swiss Federal Department of Foreign Affairs grants a contribution of CHF 568'510.--
Presentation Outline

1. Structure of the Pilot

2. Data & Results

3. Conclusions and Next Steps
2.1. Enrolment and Demography

Age, Sex and Cost
Insured Workers Fluctuation

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<td>8007</td>
<td>8448</td>
<td>8571</td>
<td>8814</td>
<td>9116</td>
<td>8818</td>
</tr>
<tr>
<td>members</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>menter</td>
<td>39</td>
<td>245</td>
<td>265</td>
<td>22</td>
<td>131</td>
<td>52</td>
<td>444</td>
<td>124</td>
<td>243</td>
<td>302</td>
<td>71</td>
<td>25</td>
</tr>
<tr>
<td>mexit</td>
<td>0</td>
<td>0</td>
<td>-438</td>
<td>0</td>
<td>-51</td>
<td>-14</td>
<td>-3</td>
<td>-1</td>
<td>0</td>
<td>0</td>
<td>-369</td>
<td>-460</td>
</tr>
</tbody>
</table>
Fluctuation Analysis
2.2. Health Care Seeking Behaviour

<table>
<thead>
<tr>
<th>After 12 months:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Members:</td>
<td>8337</td>
</tr>
<tr>
<td>Patients:</td>
<td>4528</td>
</tr>
<tr>
<td>%</td>
<td>47%</td>
</tr>
<tr>
<td>Cons. / Pat</td>
<td>15391</td>
</tr>
<tr>
<td>/ Pat</td>
<td>3.4</td>
</tr>
</tbody>
</table>
Consultancies per Patient

Percentile
25% 50% 75%

Total Patients: 4528
2.3. Cost Analysis

84% of Patients create 50% of the cost

Relation between Patient cost category and cumulative cost
Determining representative time interval for analysis

- Dr. Felix Roth
- 10. April 2015
Estimates of cost per member per month (pmpm)

The mean medical cost pmpm during the time period 18. August 2014 to 17. April 2015 was estimated to amount to:

**71,2 BDT (95% CI: 66.3 – 75.1)**

If insurance payments are truncated at a maximum of 15’000 BDT, the mean cost decreases to:

**66,7 BDT (95% CI: 63.0 – 69.4)**
Cost Distribution of medical services

- Drugs: 30%
- Investigations: 21%
- Inpatient: 14%
- Consultancies: 34%
- BADAS: 26%
- Consultancies Ashulia: 8%
2.4. Medical Analysis

Patients and cost per Diagnose Group

- No Diagn 19%
- Inpatient 14%
- C Gastrointestinal 13%
- B Respiratory Tract 13%
- S Musculoskeletal 10%
- L Minor Surgical 9%
- W Injuries 8%
- J Genito-urinary 4%
- T Obstetric & Preg 4%
- D Skin 4%
- H Viral 4%
- P Neurological 4%
- R Otological 4%
- M Mental 4%
- Q Metabolic 4%
- E Eye 4%
- N Cardiovascular 4%
- G Bacteria 4%
- I Fungi 4%
- O Hematol. 4%
- F Parasites 4%
- V Abnormal 4%
- U Neoplasms 4%

% pat % cost

34% 36% 35% 32%
## Most important Diseases

<table>
<thead>
<tr>
<th>Inpatients</th>
<th>#Pat</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C</strong> Gastrointestinal</td>
<td></td>
</tr>
<tr>
<td>C6 Appendicitis, acute</td>
<td>9</td>
</tr>
<tr>
<td>C99 acute gastroenteritis/food poisoning</td>
<td>5</td>
</tr>
<tr>
<td>L99 Perianal disease</td>
<td>6</td>
</tr>
<tr>
<td>C4 Peptic ulcer disease</td>
<td>2</td>
</tr>
<tr>
<td><strong>T</strong> Obstetric Diseases and Disorders, and Pregnancy</td>
<td></td>
</tr>
<tr>
<td>T Incomplete Abortion, Cesarean section w. complications</td>
<td>7</td>
</tr>
</tbody>
</table>
### Most important Diseases

#### Outpatient

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>#Pat</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C</strong> Gastrointestinal</td>
<td></td>
<td>4528</td>
</tr>
<tr>
<td>C4</td>
<td>Peptic ulcer disease, acid reflux</td>
<td>1651</td>
</tr>
<tr>
<td>C99</td>
<td>Other gastrointestinal diseases or disorders</td>
<td>1648</td>
</tr>
<tr>
<td>C2</td>
<td>Acute diarrhea</td>
<td>557</td>
</tr>
<tr>
<td>C1</td>
<td>Dyspepsia</td>
<td>492</td>
</tr>
<tr>
<td><strong>B</strong> Respiratory</td>
<td></td>
<td>492</td>
</tr>
<tr>
<td>B1</td>
<td>Rhinitis &amp; Rhinopharyngitis (Common Cold)</td>
<td>355</td>
</tr>
<tr>
<td>B99</td>
<td>Other respiratory diseases or disorders</td>
<td>351</td>
</tr>
<tr>
<td>B5</td>
<td>Bronchitis - Acute</td>
<td>74</td>
</tr>
<tr>
<td>B12</td>
<td>Pulmonary Tuberculosis</td>
<td></td>
</tr>
<tr>
<td><strong>S</strong> Musculoskeletal and Soft Tissue Diseases and Disorders</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S99</td>
<td>Other musculoskeletal disorder</td>
<td>2291</td>
</tr>
<tr>
<td>S1</td>
<td>Pyogenic arthritis</td>
<td>41</td>
</tr>
<tr>
<td>S2</td>
<td>Rheumatoid arthritis</td>
<td>8</td>
</tr>
</tbody>
</table>
# Most common medication

<table>
<thead>
<tr>
<th>Drug Category</th>
<th>local Brand Name</th>
<th>Generic name*</th>
<th>Drug Price (BDT per day)</th>
<th># prescriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anti-ulcer drugs</td>
<td>tab neotack 150mg</td>
<td>Ranitidine</td>
<td>2.5</td>
<td>2013</td>
</tr>
<tr>
<td>Anti-ulcer drugs</td>
<td>cap seclo 20mg</td>
<td>Omeprazole</td>
<td>5</td>
<td>1580</td>
</tr>
<tr>
<td>Anti-ulcer drugs</td>
<td>cap cosec 20mg</td>
<td>Omeprazole</td>
<td>5</td>
<td>1111</td>
</tr>
<tr>
<td>Pain reliever</td>
<td>tab napa 500mg</td>
<td>Paracetamol</td>
<td>0.8</td>
<td>1043</td>
</tr>
<tr>
<td>Pain reliever</td>
<td>tab ace 500mg</td>
<td>Paracetamol</td>
<td>0.8</td>
<td>936</td>
</tr>
<tr>
<td>Pain reliever</td>
<td>tab clofenac 50mg</td>
<td>Diclofenac Sodium</td>
<td>1.5</td>
<td>841</td>
</tr>
<tr>
<td>Pain reliever</td>
<td>tab reservix 100mg</td>
<td>Aceclofenac</td>
<td>4</td>
<td>814</td>
</tr>
<tr>
<td>Antihistamine</td>
<td>tab fexo 120mg</td>
<td>Fexofenadine Hydrochloride</td>
<td>6.5</td>
<td>713</td>
</tr>
<tr>
<td>Orsaline</td>
<td>ors aci</td>
<td>Saline</td>
<td>5</td>
<td>700</td>
</tr>
<tr>
<td>Antihistamine</td>
<td>tab deslor</td>
<td>Desloratidin</td>
<td>3.5</td>
<td>615</td>
</tr>
<tr>
<td>Anti-ulcer drugs</td>
<td>tab pantonix 20mg</td>
<td>Pantoprazole</td>
<td>5</td>
<td>474</td>
</tr>
<tr>
<td>Pain reliever</td>
<td>tab reset 500mg</td>
<td>Paracetamol</td>
<td>0.8</td>
<td>470</td>
</tr>
<tr>
<td>Antihistamine</td>
<td>tab fexofast 120mg</td>
<td>Fexofenadine Hydrochloride</td>
<td>7</td>
<td>442</td>
</tr>
<tr>
<td>Anti-ulcer drugs</td>
<td>ulcar</td>
<td>Ranitidine</td>
<td>2.5</td>
<td>413</td>
</tr>
<tr>
<td>Anti infectives</td>
<td>tab filmet 400mg</td>
<td>Metronidazole</td>
<td>1.2</td>
<td>394</td>
</tr>
<tr>
<td>Pain reliever</td>
<td>tab ace plus</td>
<td>Paracetamol &amp; Caffeine</td>
<td>2.5</td>
<td>380</td>
</tr>
</tbody>
</table>
1. Workers with insurance were 1.62 times more likely to utilize health care than non-insured controls. Influences: male sex, higher income → lower use; better schooling, married status → higher use

2. OOP expenditure showed a slight decrease with borderline significance

3. Sickness absenteeism was significantly reduced by 1 day (from 4.2 to 3.2)

4. Insured workers are willing to pay 88 BDT/month more than control group as premium

5. Dependency on savings for care becomes smaller in IG and increased in CG

5. Satisfaction with medical services: 49% happy, very happy; 35% satisfied

6. Understanding of health insurance: 72% knew the essence of premium
Presentation Outline

1. Structure of the Pilot
2. Data & Results
3. Conclusions and Next Steps
3.1. Conclusions

The essentials worked:
- Implementation one year pilot
- Software for claim processing and data collection
- Clinical Guidelines
- Diagnose Codes
- Data analysis
- Baseline and end line surveys

The nice to have failed:
- Call Centres and Gate keeping (not accepted by workers)
- Prevention Campaign (too late)
- Analysis surveys (partly satisfactory quality)
What made the difference

1. Strong Strategic Alliance among TPPM Partners
2. mandatory group insurance
3. Software, processing medical data collection and claiming with insurer
3.2. Next steps

1. Scaling up the Health Insurance scheme:
   • APEX is joining with 12’000 workers;
   • Continuation of the insurance scheme in November 2015 with 20’000 workers;
   • Other factories and Governmental agencies have shown interest.

2. Technical Support:
   • Project Partners urgently request further Technical Assistance for coaching the upscaling process and conceptual work;
   • Funding this TA not assured yet.
THANK YOU to the…..

• strategic leaders of the TPPM
• contributors
• physicians
• software developers
• NAG Managers
• insurance staff
• BUHS staff & consultants
• ICDDR,B staff & evaluators
• Delegate of SC and his PCU-team
• Initators Prof. N. Gyr & Prof A. Kahn

Last but not least!
Health Care Cost of individual insured persons related to insurance time
Analysis per Medical Service Site: Consultancies and Costs

- BDT per Patient
  - Saima Ibrahim NHN Centre, Shaipur: 1'077
  - Knit Asia Limited, Ashulla: 677
  - Subarno Ibrahim General Hospital, Chandra: 1'009
  - Ibrahim General Hospital, Mirpur: 2'521
  - Call Centre: 222
  - Mirpur inpatient: 5'106
  - CHANDRAROBHIBM-2 inpatient: 30'533

- Number Consultancies
  - Saima Ibrahim NHN Centre, Shaipur: 8010
  - Knit Asia Limited, Ashulla: 5188
  - Subarno Ibrahim General Hospital, Chandra: 1792
  - Ibrahim General Hospital, Mirpur: 251
  - Call Centre: 99
  - Mirpur inpatient: 35
  - CHANDRAROBHIBM-2 inpatient: 12
  - CHANDRAROBHIBM-2 inpatient: 2
2.4. Analysis of Factories

Patient quota per factory

<table>
<thead>
<tr>
<th>Factory</th>
<th>Insured Workers</th>
<th>Patients</th>
<th>Mean Workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knit Asia Ltd. - Shafipur</td>
<td>630</td>
<td>230</td>
<td>871</td>
</tr>
<tr>
<td>Rahim Textile Mills Ltd.</td>
<td>1456</td>
<td>780</td>
<td>2234</td>
</tr>
<tr>
<td>Knit Asia Ltd. - Ashulia</td>
<td>766</td>
<td>254</td>
<td>1461</td>
</tr>
<tr>
<td>Malek Spinning Mills Ltd.</td>
<td>1238</td>
<td>505</td>
<td>409</td>
</tr>
<tr>
<td>Knit Asia Ltd. - RMG</td>
<td>72%</td>
<td>69%</td>
<td>65%</td>
</tr>
<tr>
<td>Salek Textile Ltd.</td>
<td>52%</td>
<td>50%</td>
<td>26%</td>
</tr>
<tr>
<td>Knit Asia Ltd. - Nischintpur</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Cost per worker per factory

<table>
<thead>
<tr>
<th>Factory</th>
<th>BDT per member per month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knit Asia Ltd. - Shafipur</td>
<td>111</td>
</tr>
<tr>
<td>Rahim Textile Mills Ltd.</td>
<td>120</td>
</tr>
<tr>
<td>Knit Asia Ltd. - Ashulia</td>
<td>38</td>
</tr>
<tr>
<td>Malek Spinning Mills Ltd.</td>
<td>94</td>
</tr>
<tr>
<td>Knit Asia Ltd. - RMG</td>
<td>68</td>
</tr>
<tr>
<td>Salek Textile Ltd.</td>
<td>69</td>
</tr>
<tr>
<td>Knit Asia Ltd. - Nischintpur</td>
<td>27</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>Knit Asia Ltd. - Shafipur</th>
<th>Rahim Textile Mills Ltd.</th>
<th>Knit Asia Ltd. - Ashulia</th>
<th>Malek Spinning Mills Ltd.</th>
<th>Knit Asia Ltd. - RMG</th>
<th>Salek Textile Ltd.</th>
<th>Knit Asia Ltd. - Nischintpur</th>
</tr>
</thead>
<tbody>
<tr>
<td>inpatient</td>
<td>13</td>
<td>34</td>
<td>0</td>
<td>16</td>
<td>11</td>
<td>4</td>
<td>6</td>
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<td>consult</td>
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<td>20</td>
<td>29</td>
<td>21</td>
<td>22</td>
<td>7</td>
</tr>
<tr>
<td>invest</td>
<td>23</td>
<td>18</td>
<td>3</td>
<td>22</td>
<td>18</td>
<td>20</td>
<td>8</td>
</tr>
<tr>
<td>drugs</td>
<td>35</td>
<td>33</td>
<td>15</td>
<td>28</td>
<td>17</td>
<td>23</td>
<td>7</td>
</tr>
</tbody>
</table>
Risk pooling among factories

BDT ppm

Insured workers

Knit Asia Ltd. - Shafipur
Rahim Textile Mills Ltd
Knit Asia Ltd. - Ashulia
Malek Spinning Mills Ltd.
Knit Asia Ltd. - RMG
Salek Textile Ltd.
Knit Asia Ltd. - Nischintpur