8 years’ MD Program in ZJUSM: highly-integrated curriculum across biomedical and clinical medicine

Zhejiang University
April 13, 2018
“4+4” mode

1st “4”-year

Undergraduate
Premedical courses
undergraduate 4 years

2nd “4” year

Preclinical stage
Clinical stage
medical education 4 years

Bachelor degree in any major other than medicine in ZJU

MD degree
- Medical Cell Biology
- Medical Biochemistry & Molecular biology
- Anatomy
- Histology & Embryology
- Introduction to Preclinical Courses
- Medical informatics
- Early clinical exposure

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- 8 Blocks: see next slice
- 3 Threads:
  - Genetics
  - Doctoring and clinical skills
  - Clinical reasoning
- Special Study Modules:
  - Elective program
  - Research program

- Junior Clerkship
- Senior Clerkship

| Campus + Hospital | Campus + Hospital | Hospital |
## Preclinical: Human Biology and Integrated Medicine

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Autumn Semester (8 wks)</th>
<th>Winter Semester (8 wks)</th>
<th>Spring Semester (8 wks)</th>
<th>Summer Semester (8 wks)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Block 1 Foundations of Medicine I</td>
<td>Block 2 Medial neuroscience and behavior I</td>
<td>Block 3 Cardiovascular, respiratory and renal medicine I</td>
<td>Block 4 Gastrointestinal, endocrine and reproductive medicine I</td>
</tr>
</tbody>
</table>

### Threads

<table>
<thead>
<tr>
<th>Year 2</th>
<th>Block 5 Foundations of Medicine II</th>
<th>Block 6 Gastrointestinal, endocrine and reproductive medicine II</th>
<th>Block 7 Cardiovascular, respiratory and renal medicine II</th>
<th>Block 8 Medial neuroscience and behavior II</th>
</tr>
</thead>
</table>

### Threads
Block Design Principles in Preclinical

- To integrate basic, clinical and social sciences
- To promote active learning for deep understanding
- To encourage disease-based learning & information applying competence
- To promote student research
- To conduct multiple assessments, feedback and evaluation
A typical week in Preclinical

Weekly theme & goals
- PBL: 4 hours
- Lectures: 13-16 academic hours (45 min/a.h.)
- Lab: 8 a.h.
- Doctoring: 4 a.h.
- Weekly online formative assessment
## Graduates outcomes

### National Medical Licensing Examination (NMLE)

<table>
<thead>
<tr>
<th>Year</th>
<th>Type</th>
<th>Average Score</th>
<th>Overall pass rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>ZJU</td>
<td>422.88</td>
<td>92.9%</td>
</tr>
<tr>
<td></td>
<td>National Wide</td>
<td>368.52</td>
<td>57.6%</td>
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<tr>
<td>2012</td>
<td>ZJU</td>
<td>423.63</td>
<td>94.04%</td>
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<tr>
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<td>National Wide</td>
<td>378.81</td>
<td>62.84%</td>
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<td>2013</td>
<td>ZJU</td>
<td>413.81</td>
<td>92.90%</td>
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<tr>
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<td>National Wide</td>
<td>371.79</td>
<td>60.44%</td>
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<tr>
<td>2014</td>
<td>ZJU</td>
<td>440.01</td>
<td>93.65%</td>
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<tr>
<td></td>
<td>National Wide</td>
<td>396.15</td>
<td>68.52%</td>
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<tr>
<td>2015</td>
<td>ZJU</td>
<td>436.48</td>
<td>93.36%</td>
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<td>National Wide</td>
<td>400.78</td>
<td>73.59%</td>
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<tr>
<td>2016</td>
<td>ZJU</td>
<td>440.76</td>
<td>91.20%</td>
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<tr>
<td></td>
<td>National Wide</td>
<td>405.15</td>
<td>73.75%</td>
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</tbody>
</table>

*Between: 2011-2015  In 137 universities/schools

NMLE  5-year average maximum pass rate  93.37%  = ZJU rate !!
Conclusions and Challenges

- Established an entire new 8-year medical education program with the characteristic of “4+4” mode
- Intensively clinical exposure and training in the program
- With the results so far, the program resulted in an average higher outcomes for graduates
- How to gear the standardized resident training
- Campus education coping with social circumstance pressure