The importance of primary health care has been recognized since 1978 in the Alma Ata Declaration. The World Health Organization (WHO) has identified primary health care as the key to achieving health for all. Worldwide, family medicine, or general practice, is becoming an established discipline. To cater to the increasing demands for health care in the community and to improve its quality, there is a need to train adequate numbers of competent primary care doctors.

Academic family medicine departments along with departments of health and professional colleges have been instrumental in educating, training, and assessment of family medicine trainee doctors from undergraduate to postgraduate level. Development and establishment of academic family medicine departments in the Asia Pacific region is of interest as it holds the world’s most populated countries. Many of these countries have aging populations. All these factors result in increasing demand for trained family medicine doctors to work in primary care.

Although there has been increasing family medicine training in the Asia Pacific region, it is not equal to the development in other regions of the world such as the United Kingdom (UK), United States, and Northern and Western Europe. This is not surprising as the evolution of academic family medicine began in the 1950s in the UK and

BACKGROUND AND OBJECTIVES: The family medicine training programs in the Asia Pacific (AP) are evolving. To date, there is a lack of comprehensive and systematic documentation on the status of family medicine training in the AP. This study aims to determine the status of family medicine training at both the undergraduate and postgraduate levels in medical schools (universities or colleges) in the AP.

METHODS: In 2014, the authors conducted a cross-sectional online survey to assess the undergraduate and postgraduate family medicine programs in academic family medicine departments from AP countries. A 37-item online survey questionnaire was sent to key informants from academic institutions with established family medicine departments/units. Only one response from each family medicine department/unit was included in the analysis.

RESULTS: The medical school and country response rates were 31.31% and 64.1%, respectively. The majority of the medical schools (94.7%, n=71/75) reported having a department/unit for family medicine. Family medicine is recognized as a specialist degree by the governments of 20/25 countries studied. Family medicine is included in the undergraduate program of 92% (n=69/75) of all the participating medical schools. Only slightly more than half (53.3%) (n=40/75) reported conducting a postgraduate clinical program. Less than one third (26.7%) (n=20/75) of the medical schools conducted postgraduate research programs.

CONCLUSIONS: Undergraduate training remains the focus of most family medicine departments/units in the AP. Nevertheless, the number of postgraduate programs is increasing. A more rigorous and long-term documentation of family medicine training in the AP is warranted.

(The Status of Family Medicine Training Programs in the Asia Pacific)

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take up core clerkships or periods of clinical instruction. Once students obtained their medical doctorate (MD) degree, then they are eligible to proceed with full clinical training in a family medicine residency program accredited by the Accreditation Council for Graduate Medical Education (ACGME). Once they complete the 3-year residency program, they then must pass the certification exam by the American Board of Family Medicine (ABFM) and only then can practice as a board-certified family physician.13

To date, there is a lack of comprehensive and systematic documentation on the status of family medicine training in the Asia Pacific region. Therefore, this study aims to determine the status of family medicine training at both the undergraduate and postgraduate levels in medical schools (universities or colleges) in the Asia Pacific region. We believe this is the first step toward identifying and narrowing the gaps in family medicine training across the region.

Methodology

Study Design

This cross-sectional study was conducted between March and August 2014 using an online survey method (SurveyMonkey), which allowed the researchers to capture responses from participants from countries in the Asia Pacific region, based on the United Nations composition of macro-geographical regions and sub-regions.14

Research Instrument

This study used a survey questionnaire consisting of 37 items. It was developed following a literature review and discussion among researchers. In order to assess the training capacity of the academic department, the questionnaire aimed to assess five domains of an academic family medicine department: background information about the family medicine department, undergraduate program, postgraduate clinical and research programs, national policy, and accreditation. Experts from the research team, who are members from academic family medicine departments and professional family medicine organizations, scrutinized and agreed on the content of the questionnaire. The questionnaire was then pilot tested with three family medicine experts from three established family medicine departments in the Asia Pacific region. As there were only minimal changes to the questionnaire, the responses from the three experts were included in the analysis.

Data Collection Process

The online questionnaire was sent to key informants from academic institutions with established family medicine departments or units or who are teaching family medicine as part of the undergraduate curriculum. Two approaches were used to determine if a medical school has a family medicine department, unit, or program: (1) online search and (2) by report from resource persons (Table 1). After we had compiled the list of key informants of the family medicine departments from each country, we contacted them using the SurveyMonkey online survey program. We reminded the nonrespondents up to three times, 1 to 2 weeks apart. To optimize the response rate, each family medicine department or unit might receive more than one invitation. Only one response from a family medicine department is included in the analysis; duplicates are sought and discarded. Figure 1 illustrates the data collection process of this study.

Data Analysis

Descriptive analysis was performed to summarize the results using frequencies, mean, medians and percentages. SPSS 20.0 (SPSS Inc, Chicago, IL) software was used to manage and analyze the data.

Ethical Approval

This study obtained ethics approval from the University of Malaya Medical Centre Medical Ethics Committee (Reference: 201401-0683).
Table 1: Strategies to Identify the Presence of a Family Medicine Department or Unit and Training in Medical Schools

<table>
<thead>
<tr>
<th>To determine presence of family medicine in the medical school:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Online search</td>
</tr>
<tr>
<td>• A search on all medical schools from the Asia Pacific region listed on the AVICENNA directory was conducted to determine if they had a family medicine department/unit or program.</td>
</tr>
<tr>
<td>• If this information was not found, an in-site search for family medicine (or equivalent terms such as general practice and primary care) using Google (search string: “family medicine” site: [website url]) was conducted.</td>
</tr>
<tr>
<td>• In cases where the university’s website was not found or if there were any issues assessing the website, a simple Google search was performed using the search words “family medicine” (or equivalent terms) and the university’s name.</td>
</tr>
<tr>
<td>• When there were no results using the search strategy, we assumed the university did not have a family medicine department, unit, or training program. When there was a direct relation found between that university and the subject of family medicine, even if there was no family medicine department or unit found on the university’s website, we listed the medical school as potentially having a family medicine department, and the contact details of the dean were obtained.</td>
</tr>
<tr>
<td>• For medical schools that had a department webpage for family medicine, the head of the department was invited to participate in the study. When the head of the department was not available, another member of the department was contacted. When the members of the family medicine department were not publically available, the dean of the medical department was contacted, and he/she would be asked to recommend a suitable candidate to participate in the study.</td>
</tr>
<tr>
<td>• The researchers also sought information from experts (“resource person”) who were knowledgeable in the field of family medicine from each country.</td>
</tr>
</tbody>
</table>

Results

Study Response Rate

Of the 76 countries and 983 medical schools in the Asia Pacific region, 313 medical schools from 39 countries had family medicine programs. However, only 98 medical schools from 25 countries responded. Therefore, the medical school response rate of the study was 31.31% (n=98/313) (Figure 1) while the country response rate was 64.1% (n=25/39).

Out of the 98 medical schools, responses from 23 medical schools were removed due to non-consent, incomplete answers, and duplicates. Therefore, only 75 medical schools were included in the data analysis. Figure 2 illustrates the responses from countries in this study.

Status of Academic Family Medicine Departments/Units in the Asia Pacific

Family Medicine Departments/Units and Academic Staff. Out of the 75 medical schools, 94.7% (n=71) reported having a department or unit for family medicine, and most were independent departments (78%) (n=55/71). The median number of full-time staff teaching in the family medicine department or unit was:

- five for academic staff (interquartile range [IQR]: 3–8, range: 0–32), one for professor (IQR: 0–1, range: 0–4), two for associate or assistant professor (IQR: 1–4, range: 0–22), one for senior lecturer/lecturer (IQR: 0–4, range: 0–25), and zero for researcher (IQR: 0–1; range: 0–40). The median number of staff with a PhD was two (IQR: 1–4, range: 0–13).

Family Medicine Recognition and Training. Family medicine is recognized as a specialist degree by the governments of 20 countries studied. Family medicine is included in the undergraduate programs of 92% (n=69/75) of all the participating medical schools. Among the participating medical schools, 53.3% (n=40/75) conducted postgraduate clinical and 26.7% (n=20/75) conducted research programs (Table 2). There was an increasing number of family medicine departments or units involving both undergraduate and postgraduate programs since 1985 (Figure 3).

Undergraduate Program

The median duration for undergraduate family medicine postings was 7 weeks (IQR: 2–10, range: 0–52). In 2013, the median number of students enrolled into the undergraduate programs was 205 (IQR: 125–350, range: 20–1,300). Most of the undergraduate family medicine programs (87.5%, n=63/72, three medical schools did not respond) were accredited by a national accreditation body (Table 2).

The common teaching methods used were clinical teaching (92.6%, n=63), followed by lectures (80.9%, n=55) and classroom teaching (77.9%, n=53) while the most common assessment methods were multiple choice questions (70.6%, n=48), followed by objective structured clinical examination (OSCE) (63.2%, n=43) and short answer questions (47.1%, n=32).

Postgraduate Program (Clinical)

The median duration for clinical postgraduate programs in these medical schools was 3 years (IQR: 2–3, range: 1–4). The number of trainees in the current semester was 19.5 (IQR: 5–40.5, range: 1–450). The majority (90.9%, n=37/39, one medical school did not respond) of the medical schools reported that their clinical postgraduate programs included hospital attachment.
Figure 1: Data Collection Process of the Online Survey

Selection of countries
Based on the United Nations composition of macro geographical regions and sub-regions

Countries
Countries in the region of Asia and Oceania
n=76

Selection of medical schools
Based on the AVICENNA Medical School Directory
*Hong Kong, Taiwan and Macau were separated from mainland China and included because they have established FM programs

Medical schools
Medical schools selected
n=983 (from 51 countries)

Countries without FM department/unit/programs
n=12*
*Azerbaijan, Cambodia, North Korea, Fiji, Kuwait, Laos, Macau, Mongolia, Papua New Guinea, Turkmenistan, Uzbekistan, Vanuatu

Schools with FM departments/units/programs
n=313 (from 39 countries)

Online survey data collection method,
SurveyMonkey online survey program.
Invitations sent
n=376 key informants

Medical schools with FM departments/units/programs responses
n=98

Removed
- Non-consent = 1
- Incomplete questionnaire = 13
- Duplicates = 9

Final responses
n=75 (from 25 countries)
median total duration for the hospital posting was 18 months (IQR: 13.5–30.75, range: 2–40). Of these medical schools, 71.8% (n=28/39) reported that their programs required a research dissertation.

The most common teaching method used in the postgraduate clinical programs was clinical teaching (94.9%, n=63), followed by case presentations (94.9%, n=37) and lectures (89.7%, n=35), while the common assessment method was multiple choice questions (74.4%, n=29), followed by practice-based assessment (61.5%, n=24) and the portfolio (60.5%, n=23).

Postgraduate Program (Research)
Of the 75 medical schools, 26.7% (n=20/75) have research postgraduate training programs. The research programs offered by most medical schools was Master's by research or coursework (nonclinical) (85%, n=17/20), followed by PhD programs (65%, n=13/20) and Medical

Table 2: The Status of Family Medicine Undergraduate and Postgraduate (Clinical and Research) Training and Accreditation by Countries in the Asia Pacific

<table>
<thead>
<tr>
<th>Country</th>
<th>Medical Schools With FM</th>
<th>No of Institutions Responded</th>
<th>Recognition of FM as a Specialist Degree in the Country</th>
<th>FM in Undergraduate Program</th>
<th>FM in Post-Graduate (Clinical) Program</th>
<th>FM in Post-Graduate (Research) Program</th>
<th>Undergraduate Institution Accreditation</th>
<th>Postgraduate Institution Accreditation</th>
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</thead>
<tbody>
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<td>19</td>
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<td>9</td>
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<td>1</td>
<td>9</td>
<td>5</td>
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<td>2</td>
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<td>1</td>
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<td>1</td>
<td>1</td>
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<td>0</td>
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<td>—</td>
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<tr>
<td>India</td>
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<td>0</td>
<td>1</td>
<td>1</td>
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<tr>
<td>Indonesia</td>
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<td>*</td>
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<td>2</td>
<td>4</td>
<td>9</td>
<td>6</td>
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<td>*</td>
<td>3</td>
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<tr>
<td>Kazakhstan</td>
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<tr>
<td>Lebanon</td>
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<tr>
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<td>4</td>
<td>3</td>
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<td>—</td>
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<tr>
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<tr>
<td>Republic of Korea</td>
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<td>Yes</td>
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<td>5</td>
<td>3</td>
<td>5</td>
<td>5</td>
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<tr>
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<td>2</td>
<td>Yes</td>
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<td>Singapore</td>
<td>2</td>
<td>1</td>
<td>No</td>
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<tr>
<td>Sri Lanka</td>
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<td>4</td>
<td>Yes</td>
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<tr>
<td>Taiwan</td>
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<tr>
<td>Thailand</td>
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<td>2</td>
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<tr>
<td>Turkey</td>
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<td>8</td>
<td>7</td>
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<td>5</td>
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</tr>
<tr>
<td>United Arab Emirates</td>
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<tr>
<td>Viet Nam</td>
<td>8</td>
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<td>1</td>
<td>1</td>
<td>0</td>
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<td>1</td>
</tr>
<tr>
<td>% (n)</td>
<td>(313)</td>
<td>(75)</td>
<td>80% (20/25)</td>
<td>92% (69/75)</td>
<td>53.3% (40/75)</td>
<td>26.7% (20/75)</td>
<td>84% (63/75)</td>
<td>70.7% (53)</td>
</tr>
</tbody>
</table>

* The recognition of family medicine as a specialist degree in the country was unable to be determined as there were discrepancies in answers among participants within the country.
Doctorate (MD) programs (45%, n=9/20).

The median duration for Master’s programs was 2 years (IQR: 2–3, range: 2–4), and the current number of students was five (IQR: 3–103, range: 2–200). The median duration for MD programs was 3 years (IQR: 2.5–3, range: 2–3), and the current number of students was 1.6 (IQR: 0.5–2.5, range: 0–3). The median duration for PhD programs was 3 years (IQR: 2–4.5; range: 2–6), and the current number of students was 6.62 (IQR: 1.5–9, range: 1–33).

The formats for these programs were reported to be mainly by dissertation and thesis in the majority of medical schools. Collectively, the medical schools had eight Master’s programs, two MD programs, and five PhD programs. Fifty-three medical schools reported that their postgraduate programs were accredited by a national accreditation body in their country (73.6%, n=53/72).

Discussion

The State of Family Medicine Training in the Asia Pacific

This study revealed that there has been significant development of family medicine training in the Asia Pacific region in the last 2 decades. The establishment of family medicine departments or units has been growing since 1995. Seventy-one out of 75 medical schools in the region reported having a family medicine department or unit. Of the four medical schools that did not have a family medicine department or unit, family medicine teaching in the undergraduate level was integrated into the undergraduate medical curriculum.

This study also found that there were more undergraduate than postgraduate family medicine clinical programs available. Only a quarter of the medical schools offered postgraduate family medicine research programs. This probably reflects the stage of the development of family medicine in the region where most of the family medicine departments are still young and have a small number of staff. However, this might limit the training capacity and the ability to establish postgraduate courses.

The progress of academic family medicine in the Asia Pacific region varies among the countries in the region. The majority (20/25) of the countries represented in this study recognize family medicine as a specialist degree. Although the recognition of family medicine as a specialist degree in the country was unable to be determined in India, Indonesia, and Japan in this study, a literature review found that family medicine is a recognized specialist degree in India but not in Indonesia and Japan.

The recognition of the need to develop family medicine into a specialized discipline is influenced by the health care system, medical education system, and needs of the countries. In Japan, the development of academic family medicine is still at its early phase. A universal health care insurance system in the country,
which allows Japanese patients to seek treatment wherever they prefer, had led to overuse of specialized care. Although, in recent times, a vocational training program has been organized by the Japanese Academy of Family Medicine. In Indonesia, despite the need for primary care doctors in the country, there is a lack of family medicine specialists to teach in the undergraduate and graduate levels. It has been recommended by WHO that Indonesian primary care doctors should uptake additional postgraduate education as family doctors; however, the representative board of the Indonesian Medical Council instead decided to improve family medicine training at the undergraduate level. Indonesia is currently developing its family medicine postgraduate and specialist training program and is working toward family medicine specialization in the country (based on an open comment by an Indonesian participant of this study).

This study found that medical schools from Australia, Indonesia, Iran, Japan, Kazakhstan, Malaysia, New Zealand, South Korea, Singapore, and Taiwan provided postgraduate research training. Further, there were many medical schools, which reported to include research dissertation as part of their postgraduate clinical program. Although the number is not many, this may reflect that family medicine training in the Asia Pacific region recognizes research as an important way to advance the discipline. For example, Australia’s competency in primary care research is comparable to countries with well-established academic family medicine, such as Canada, Germany, The Netherlands, the United Kingdom, and the United States.

Situating Asia Pacific Academic Family Medicine in the World
Many of the medical schools in this study have a department/unit for family medicine. In contrast all medical schools in the UK have a family medicine/general practice department with at least one professor of family medicine in each department. Our study revealed that one medical school in our study did not have full-time academic staff teaching family medicine but family physicians who teach part time. In Central and Eastern Europe (CEE), some of the family medicine departments are chaired by general practitioners. In Europe, the majority (80.7%) of the medical schools are involved in family medicine teaching, but this is only observed in 313/983 (31.8%) medical schools in this study.

The inclusion of family medicine as part of the undergraduate curriculum was found in almost all of the medical schools within the participating countries of this study except for Indonesia (9/10), Iran (0/1), Japan (3/5), and Lebanon (1/2). This is comparable to countries in CEE whereby most of the medical schools in the region have a family medicine component in their undergraduate teaching except for Czech Republic (3/7) and Russia (13/51). In sub-Saharan Africa, universities in eight countries (Sudan, Ghana, Nigeria, DR Congo, Rwanda, Uganda, Kenya, and Tanzania) do not have family medicine as part of their undergraduate medical training by 2010. However, in terms of the average duration of family medicine posting in the undergraduate program included in this study (7 weeks), this finding is comparable to medical schools in...
Northern Europe with 5–13 weeks of family medicine clinical rotation and is longer than most medical schools in Eastern or Southern Europe.10

This study found that the teaching methods in family medicine undergraduate programs within the Asia Pacific region are still using conventional teaching methods such as lectures and classroom teaching. Lectures involve a bigger group of students while classroom teaching limits to a smaller group; both are conducted in a didactic manner. In countries with more established family medicine training, such as the UK, family medicine training has shifted from didactic teaching to small-group and practice-based teaching.8 More advanced teaching methods, such as usage of electronic materials and online methods, are only reported by three medical schools in our study. The lack of usage of electronic multimedia to support clinical teaching may be due to students’ preference for direct observation of health providers in practice rather than relying on IT as a form of learning as found in the UK.21

The median duration for postgraduate clinical training conducted by medical schools in the Asia Pacific region is 3 years. This is similar to the duration of the family medicine residency programs in the United States, UK, and most CEE countries.10,20 In Canada, the length of family medicine vocational training programs is 2 years while in Sweden it is 5 years. Within the Asia Pacific region, Hong Kong is reported to have the longest vocational training program (6 years), followed by New Zealand (5 years) and Saudi Arabia (4 years).22 Interestingly, some medical schools were reported to include hospital attachments, and this is also found in the family medicine residency programs in the United States.23

This study found a small number of family medicine departments offering research programs. Incompetence in research skills has been identified as a significant factor in influencing research activity and productivity among family medicine faculty members.7 In CEE, the lack of a research culture and shortage of relevant infrastructure hinder research careers among general practitioners rendering research activity to be less active in the region as compared to family medicine teaching.20 Among the strategies that could increase and improve research training in AP include establishing more family medicine departments, increasing research partnerships, and giving access to resources such as computers and the internet.24

Study Limitations
There are several limitations to this study. First, not all medical schools from each country responded to our survey. For instance, only a few medical schools in China, Japan, and Korea that have family medicine programs responded to our study. We believe that language is the main contributor to this lack of response, and this has been pointed out by Hays (2003) as one of the challenges in developing a collaborative and cohesive academic family medicine in the Asia Pacific region.8 We used English in the survey as it is a common language. However, we found that many countries in this study did not use English. Secondly, this study only included medical universities and colleges. In some of the Asia Pacific countries, postgraduate clinical training courses are conducted by professional bodies. For instance, in Australia, Japan, India, Thailand, and Taiwan, family medicine training is conducted by teaching hospitals and community clinics. Therefore, the postgraduate training courses in the medical centers were not captured. Thirdly, different countries may have different meanings for terms such as family medicine, primary care and general practice or assistant professor and associate professor. Different interpretations of these terms may lead to inaccurate results as well as limit the comparisons of the findings in this study. Fourthly, the database “WHO Avicenna Directory of Medical Schools” used in this study did not include all the medical schools in each country. Lastly, not all universities have a website accessible to the public, which limits our online searches.

Conclusions
This pilot study highlighted the need for more rigorous and long-term tracking of family medicine training in the Asia Pacific region. Although undergraduate training remains the focus of most family medicine departments/units, an increasing number of them are offering postgraduate family medicine programs. A more representative sample is needed to confirm and generalize our findings.

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