M.Ch Urology
Curriculum and Syllabus 2013
Branch Code: 403

SRM Medical College Hospital & Research Centre
SRM University
SRM Nagar, Kattankulathur
Kancheepuram (Dt). 603 203
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M.Ch Urology

1. A. GOALS

The goal of M.Ch Urology is to produce a competent urologist who:

- Has acquired the competence pertaining to urology surgery that is required to be practiced in the community and at all levels of health care system
- Has acquired the skills to manage the patients of trauma effectively.
- Has acquired skill in effectively communicating with patient and his attendants.
- Has the desired surgical skills to independently operate on elective and emergency cases
- Is aware of the latest developments in the field of surgery and oriented to principles of research methodology
- Has acquired skills in educating medical and paramedical professionals.

B. OBJECTIVES

At the end of the M.Ch Urology, the student should be able to

- practice the specialty of urology surgery in keeping with the principles of professional ethics
- recognize and identify the various surgical problems
- institute diagnostic, therapeutic, rehabilitative and preventive measures to provide holistic care to the patient
- take detailed history, perform full physical examination and make clinical diagnosis, perform relevant investigative and therapeutic procedures
- interpret important imaging and laboratory results
- Independently perform basic surgical procedures
- manage surgical trauma emergency efficiently
- Demonstrate empathy and human approach towards patients and their families.
• demonstrate communication skills of a high order in explaining management and prognosis, providing counseling and giving health education to patients, families and communities,
• develop skills as a self-directed learner, recognize continuing educational needs, use appropriate learning resources, and critically analyze relevant published literature in order to practice evidence-based surgery, facilitate learning of medical/nursing students, practicing physicians, paramedical health workers and other providers as a teacher/trainer
• organize and supervise the desired managerial and leadership skills

2. COURSE OVERVIEW

Duration of the course:
The period of certified study and training for the Post Graduate M.Ch in Urology shall be Three Academic years (Six Academic Terms). The academic terms shall mean six months training period.

Commencement of Academic Session:
The academic session for the Post Graduate shall commence from the month of August/September of the Academic year.

Date of Examination:
The candidates admitted up to 30th September of the academic year shall be registered for that academic year and shall take up their Final Third Year regular examination in August/September of the due year and February/March of the academic year after completion of three (3) years.

Number of Examinations:
The University shall conduct not more than two examinations in a year, for any subject, with an interval of not less than four (4) and not more than six (6) months between the two examinations.

Attendance:
All students joining the Post Graduate training programme shall work as full time Residents during the period of training, attending not less than 80% (eighty percent) of the training during each calendar year, and will be given full time responsibility, assignments and participation in all facets of the educational process.
The period of training for obtaining the degree shall be three completed years including the period of examination

Leave: Residents would be entitled to 30 days leave in the first year and 36 days each in the second and third years of residency.
Postings/Rotations:-

There will be structured training programme. The students are expected to learn in phased manner starting with basic care progressing to advanced care management.

3. COURSE CONTENT

It will cover wide spectrum of the diseases of urogenital system & retroperitorium apart from clinical aspect of these subjects. Student will be trained to analyse various urological problems and will be taught to do various open and endoscopic surgical procedures with expertise.

TRAINING & TEACHING METHODOLOGY

Besides didactic lectures delivered by the faculty members and by national & international visiting faculties, seminars symposiums and journal clubs are to be organized. Problem oriented training to be given in the form of case discussions, ward rounds, inter-disciplinary meetings and departmental clinical meetings. Every candidate is supposed to discuss and present in a minimum of two clinico-pathological conferences. Training is to be imparted by full time residency training programme, where a trainee will be responsible for the patients. He/she will be encouraged to improve and develop his/her decision-making under supervision of teachers.

TRAINING IN OPERATIVE UROLOGY

Special attention to be paid to improve skills of the candidate. He/She shall be trained to take independent operative decisions. In a time bound schedule an opportunity will be accorded to all the major open as well as endoscopic procedures so as to let him/her develop mastery in the procedures. Candidates will be required to maintain a logbook of operative procedures with complications, if any, and their management. This will be reviewed every three months. Logbook is to be submitted before the practical examination and will be reviewed by the external examiners.

Teaching activities will be reviewed periodically

1) PG student will be a full time resident and will be responsible for the total care of the patients. He will be encouraged to take independent decisions.

2) Daily Case discussions during ward rounds and in Out Patients hours. Students will present the cases and our faculty members will guide them.

3) Faculty members will give lectures weekly twice for an hour. Residents can discuss various related topics.

4) Journal clubs will be held twice a month. Recent advances in various branches of urology will be discussed
5) Uropathology, Uro radiology, Uro oncology, Uro nephrology, meets will be conducted in collaboration with other departments and residents will get their knowledge also.

6) Consultation to the other department and in emergency will only be attended by the IIrd & III rd year senior Residents. Consultations given to other departments should also discussed every morning with the respective consultants.

7) In OPD a candidate will see the cases independently and will make all the pertinent notes. In problematic cases and a special referral, it is mandatory to show the case to the respective unit Head consultant. A candidate will not be allowed to provide independent consultations for first six months.

**TRAINING SCHEDULE FOR THREE YEARS**

**FIRST TWO YEARS**

**0-06 Months**

A candidate is supposed to master following procedures.

1. **Minor Urological Procedures:**
   
   Cystourethroscopy, filiform, dilatation, retrograde pyelography. Interpretation of Normal and findings in relation to gross inflammations, obstructive and neoplastic changes in the lower tract.

   Needle biopsy of the prostate, dilatation, trocar cystostomy, open cystostomy, orchidectomy, circumcision, meatotomy/Meatoplasty , Arterio-venous shunts, Excision of urethral caruncle.

2. **Uro-Radiological & Imaging Techniques:**

   During this period, a candidate should perform various uroradiological & Imaging procedure Retrograde Urethrograms & Micturating cystourethrogram, Cystogram, nephrostogram, Whitaker test, sonogram, vasoseminography, antegrade pyelography, interpretation of Ultrasound & computerized tomography’s scans and renography, renal angiography including Digital Subtration Angiography & venography.

**06-09 Months**

A candidate should learn, perform and interpret urodynamic studies like Cystometrogram myography & Urethral pressure profile & Video urodynamics. He will also perform and interpret various tests of sexual dysfunction such as dynamic cavernosography, papavarin test, NPT test, REGIscan and other evoked potential studies.
09-23 Months

He/She will assist and perform following procedures.

(a) Endoscopic Surgery:

Internal urethrotomy, Bladder neck Incision, Litholapaxy, cystolithotripsy, insertion & retrieval bladder & ureteral stent, ureteral meatotomy, endoscopic suspension of bladder neck, Transurethral resection of bladder tumour.

(b) Surgical Procedures:

Simple nephrectomy, Radical nephrectomy, cystolithotomy ,ureterolithotomy, pyelolithotomy, nephrostomy, pyeloplasty, various urethroplasties. Retropubic & transvesical prostatectomy, surgery for underscended testis, partial and total amputation of penis, extended pyelolithotomy, VVF repair.

24-36 Months

Open surgery

Candidate should learn more complex surgical procedures like urethroplasty, Hypospadias repair, Augmentation cystoplasty, Anatrophic Nephrolithotomy under hypothermia, extosthy closure, urinary diversion, ureteroneocystomy,partial and total cystectomy ,nephroureterectomy, penile prosthesis, Artificial urinary sphincter, Microsurgical Vasoepididmostomy and vasovasostomy, Renal transplant surgery and AV fistulae, retroperitoneal lympadenectomy.

Endoscopic Procedure

Transurethral resection of prostate, percutaneous nephrolithotomy, Uretero - renoscopy, Laser Surgery other endourolocial procedures etc.

Efforts will be made that candidate is able to perform the following minimum stipulated number of procedures within three years of his/her training.

1. Endoscopies 100
2. Urethroplasties 5
3. Internal urethrotomy 20
4. Internal tract reconstructions 10
5. Repair of vesicovaginal fistulae 5
6. Pyeloplasties 5
7. Hypospadias repair 5
8. Transurethral Resection of Prostate 25  
9. Uretero – Renoscopy 25  
10. Percutaneous Nephrolithotomy & endopyelotomy 15  
11. Donor Nephrectomies 5  
12. Recipient Surgery 2  

In addition to above mentioned procedures will perform/assist minimum of two or five of each of following procedures depending upon the availability of the case material  

1. Nephrectomy for pyonephrosis –  
2. Surgical treatment of stress urinary incontinence  
3. Radical Cystoprostatectomy  
4. Radical Nephrectomy  
5. Ureteroneocystomy  
6. Retroperitoneal lymphnode dissection-  
7. Ileal replacement  
8. Different type of Urinary of orthotopic Neobladder  
9. Surgical management of Renal and Urethral trauma  
10. Transpubic urethroplasty  
11. Augmentation cystoplasty  
12. Nephroureterectomy  
13. Undiversion  
14. Anatrophic Nephrolithotomy  
15. Laparoscopic Urologic Surgery  
16. Paediatric surgical procedures.

**RESEARCH**

Each candidate has to carry out studies for thesis, which should be accepted publication in an Indian Journal or any International Journal.  

1. Experimental Research project – One  
   May be a) Animal lab work or  
   b) Associated with a Basic science Dept.  

2. Clinical Research Project – At least one
4. SYLLABUS

In general the course of the study shall include:

GENERAL TOPICS:

A) BASIC SCIENCES:

Basic sciences relevant to urology- Anatomy, Embryology, Physiology, Biochemistry, Pharmacology, Pathology, Microbiology, Epidemiology, Immunology etc.

B) CLINICAL SCIENCES:

1. Investigative urology & genito-urinary radiology and imagine including nuclear medicine.
5. Urodynamics and neurology.
6. Genito – urinary trauma
8. Uro-oncology-adult & paediatric.
9. Reconstructive urology.
11. Urinary tract infections and sexually transmitted diseases.
12. Obstructive uropathy.
15. Gynaecological urology
17. Operative urology-open and endoscopic.
18. Endourology
21. Electrocoagulation, lasers, fibre optics, instruments, catheters, endoscopes etc.
22. Retroperitoneal diseases & management.
23. Medical aspects of the kidney diseases.
25. Apart from above mentioned subjects, each candidate should have basic knowledge of the following:
Biostatistics & epidemiology.
Computer science.
Experimental and research methodology and evidence based medicine.
Scientific presentation.
Cardio - pulmonary resuscitation.

5. MAINTENANCE OF LOG BOOK

Log Book (performance record book):

Maintenance of performance record log book is mandatory. Certified and assessed copy should be made available at time of practical examination for review by examination.

Log Book should contain:

1. Certificate duly signed by teacher, Head of Department, Head of institute stating Dr.………..has worked in department from …….. to …. For a period of 3 years. This performance record book contain authentic record of work done assessment for last 3 years.

2. Record of training:
   - Name of the trainee
   - Name of the hospital
   - Training period
   - Name of teacher.

3. Posting

4. Working schedule

5. Teaching programme.

6. Presentation at journal club; date, Article name, Assessment.

7. Seminars: Date, Topic / subject, assessment

8. Case presentation: date, Case, Teacher’s signature

9. Death audit / C P C: Date Case discussed, Assessment & Signature.

10. Surgical Procedures: date, name of patient, Type, Surgery – assisted / done Complications observed.

11. Teaching activity: Date, Topic, Class.

12. Participation in Research activity: name of Project, Duration.

13. Conferences / Workshop attended paper presentation / Publications.
6. THESIS

Every student registered as post graduate shall carry out work on assigned research project under the guidance of a recognized post graduate teacher, the result of which shall be written up and submitted in the form of a thesis.

Work for writing the thesis is aimed at contributing to the development of a spirit of enquiry, besides exposing the students to the techniques of research, critical analysis, acquaintance with the latest advances in medical science and the manner of identifying and consulting available literature. Thesis shall be submitted at least six months before the theoretical and clinical / practical examination.

Thesis shall be a bound volume of a minimum of 50 pages and not exceeding 75 pages of typed matter (Double line spacing and on one side only) excluding certification, acknowledgement, annexure and bibliography.

Thesis should consist of

   a) Introduction  
   b) Review of literature  
   c) Aims and objectives  
   d) Material and methods  
   e) Result  
   f) Discussion  
   g) Summary and conclusion  
   h) Tables  
   i) Annexure  
   j) Bibliography  
   k) Ethics committee clearance certificate

Four copies of thesis shall be submitted six months prior to the commencement of the theory examinations on the date prescribed by the Controller of Examinations of this university. The thesis should be approved by the professor of that branch and the same has to be forwarded to the Controller of Examinations, by the Head of the Department through the Dean of the college.

Two copies in addition are to be submitted as an electronic version of the entire thesis in a standard C.D. format by mentioning the details and technicalities used in the C.D. format.

The thesis shall be examined by a minimum of three examiners, who shall not be examiners for theory and clinical; and on the acceptance of the thesis by two examiners the candidate shall be allowed to appear for the final examination.

EVALUATION OF THESIS:  

ACCEPTED / NOT ACCEPTED

No marks will be given

Assessment of performance
Name: 

Residential year: II

Score: 1 through 10

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<th>Month 4-6</th>
<th>Month7-9</th>
<th>Month10-12</th>
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Signature of unit in- charge

Head of the department

Signature of PG student
ASSESSMENT OF PERFORMANCE II

Evaluation form: Clinical case presentation

Name: ____________________________ Date: _______________

Points to be considered:

1. Completeness of history
2. Whether all relevant points elicited.
3. Cogency of presentation.
4. Logical order.
5. Mentioned all positive and negative points of importance.
6. Accuracy of general physical examination.
7. Whether all physical signs missed or misinterpreted.
8. Whether any major signs missed or misinterpreted.
9. Diagnosis: Whether it follows logically from history and findings.
10. Investigations required
    complete list.
    Relevant order.
    Interpretation of investigations.
11. Overall
    Ability to react to questioning – whether answers relevant and complete.
    Ability to defend diagnosis.
    Ability to justify differential; diagnosis confidence
12. Others.

Signature: ____________________________
ASSESSMENT OF PERFORMANCE III

Evaluation form: Journal club

Name: ___________________________ Date: ___________________________

Points to be considered:

1. Choice of articles.
2. Cogency of presentation.
3. Whether he has understood the purpose of the article.
4. How well did he defend the article.
5. Whether cross references have been consulted.
6. Whether other relevant publications have been consulted.
7. His overall impression of articles.
   If good – reasons :
   If poor – reasons :
8. Audiovisual aids.
9. Response to questioning.
10. Overall presentation.
11. Others

Signature
7. SCHEME OF EXAMINATION

Theory - 4 papers, 100 Marks each  
Duration: Three hours each  
Paper I : Basic Sciences applied to Urology 100  
Paper II : General Adult & Paediatric Urology 100  
Paper III : Regional Systemic Urology 100  
Paper IV : Recent Advances in Urology 100  

Total 400

DISTRIBUTION OF MARKS

Two Essays 20 Marks each (20 x 2) 40 Marks  
Ten Short notes 6 Marks each (6 x10) 60 Marks  

TOTAL 100 Marks

Practical/Clinical and Oral Examination

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<th>No. of Cases</th>
<th>Duration</th>
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<tr>
<td>LONG CASE</td>
<td>Onex100</td>
<td>One Hour</td>
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<tr>
<td>SHORT CASE</td>
<td>Twox50</td>
<td>One Hour</td>
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<td></td>
<td>(30 mts Each)</td>
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<tr>
<td>WARD ROUNDS</td>
<td>Four</td>
<td>One Hour</td>
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TOTAL 300

Oral / Viva Examination 100

TOTAL 400

Note: Not more than 3 candidates will be examined in practical / clinical and oral examination per day.

Thesis: Approved / Not approved (No Marks)

MARKS QUALIFYING FOR A PASS

<table>
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<tr>
<th>Maximum Marks</th>
<th>Marks Qualifying for a pass (50%)</th>
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<tr>
<td>Theory 400</td>
<td>200</td>
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<tr>
<td>Clinical 400</td>
<td>200</td>
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<tr>
<td>Oral</td>
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<td>TOTAL 800</td>
<td>400</td>
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*“The postgraduate medical students are required to pass theory and practical examinations separately. An examinee should obtain minimum 40% marks in each theory paper and not less than 50% marks cumulatively in all the four papers for Degree examination to be cleared as “Passed” at the said Degree examination”

*As per Medical Council of India notification date 03.09.2014 and the same approved in the 28th Academic council meet of SRM University held on 23/03/2015.

8. EXAMINATION AND EVALUATION

APPRAISAL:

To improve the M.Ch Training Programme by having appraisal for Postgraduate trainees.

Accordingly, the assessment of the postgraduate, review of the progress and appraisal infrastructure and facilities will be carried out.

The Department shall conduct periodic assessment tests of the Postgraduate student as per the guidelines issued from time to time.

At the end of 3 years the appraisal report will be submitted.

1(1) EXAMINERS

(a) All the post graduate examiners shall be recognized post graduate teachers holding recognized post graduate qualifications in the subject concerned.

(b) For all post graduate examinations, the minimum number of examiners shall be four, out of which at least two (50%) shall be external Examiners, who shall be invited from other recognized universities from outside the State and other two will be internal examiners for M.Ch

(c) Under exceptional circumstances, examinations may be held with 3 (Three) examiners provided two of them are external and Medical Council of India is intimated the justification of such action prior to publication of result for approval. Under no circumstances, result shall be published in such cases without the approval of Medical Council of India.

(d) In the event of there being more than one centre in one city, the external examiners at all the centers in that city shall be the same. Where there is more than one centre of examination, the University shall appoint a Supervisor to coordinate the examination on its behalf.

(e) The guidelines regarding appointment of examiners are as follows: -

1. No person shall be appointed as an examiner in any subject unless he/she fulfils the minimum requirements for recognition as a Post Graduate teacher as laid down by the Medical Council of India and has teaching experience of 8 (Eight) years as a Lecturer / Assistant Professor out of which he/she has
not less than 5 (five) years teaching experience after obtaining Post Graduate degree. For external examiners, he/she should have minimum three years experience of examinership for Post Graduate diploma in the concerned subject. Out of internal examiners, one examiner shall be a Professor or Head of Department.

2. There shall be at least four examiners in each subject at an examination out of which at least 50% (Fifty percent) shall be external examiners. The external examiner who fulfils the condition laid down in clause – 1 above shall ordinarily be invited from another recognized university, from outside the State: provided that in exceptional circumstances examinations may be held with 3 (three) examiners if two of them are external and Medical council of India is intimated with the justification of such examination and the result shall be published in such a case with the approval of Medical Council of India.

3. An external examiner may ordinarily be appointed for not more than three years consecutively. Thereafter he/she may be reappointed after an interval of two years.

4. The internal examiner in a subject shall not accept external examiner ship for a college from which external examiner is appointed in his/her subject.

5. The same set of examiners shall ordinarily be responsible for the written, practical or part of examination

6. There shall be a Chairman of the Board of paper – setters who shall be an external examiner and shall moderate the question papers.

7. Where there is more than one centre of examination, there shall be Co-ordinator appointed by the University who shall supervise and Co-ordinate the examination of behalf of the University with independent authority.

(2). Number of candidates:

The maximum number of candidates to be examined in Clinical / practical and Oral on any day shall not exceed three for M.Ch degree examination.

(3). Number of examination: -

The university shall conduct not more than two examinations in a year, for any subject, with an interval of not less than 4 and not more than 6 months between the examinations.
Master of Chirurgery (M.Ch) Urology.

The examination shall consist of: Theory and Clinical / Practical and Oral.

(a). Theory
There shall be four theory papers; one paper out of these shall be in Basic Medical Sciences, and another paper on Recent Advances. The theory examination will be held sufficiently earlier than the Clinical and Practical examination, so that the answer books can be assessed and evaluated before the start of the clinical / Practical and Oral examination.

(b). Clinical / Practical and Oral
Practical examination shall consist of carrying out special investigation technique for Diagnosis and Therapy. Oral examination shall be comprehensive to test the candidate’s overall knowledge of the subject.

A candidate shall secure not less than 50% marks in each head of passing which shall include (1) Theory (2) practical including clinical and viva voice examination.

Evaluation of Answer Scripts

The answer books shall be valued by two examiners. One of the two examiners will be from this university and the other will be from any other university. The average of the two marks secured by the candidate will be taken into account. If the difference between two marks exceeds 20%, the answer script shall be valued by the third examiner. The average of the nearest two marks shall be considered as the final marks.
9. MODEL QUESTION PAPER

M.Ch – UROLOGY

Paper – I BASIC SCIENCES APPLIED TO UROLOGY

Time: 3 hours

Maximum: 100 marks

Answer ALL questions

Draw diagrams wherever applicable

I. Elaborate on: (2 x 20 = 40)

2. Complications of the use of intestinal segments in the urinary tract.

II. Write notes on: (10 x 6 = 60)

1. Tissue engineering in urology.
2. Metabolic complications of the use of intestinal segments in the urinary tract.
3. Port sites metastases.
4. Evaluation of the recurrent stone former.
5. Duloxetine in SUI.
6. Urological applications of botulinum toxin.
I. Elaborate on:  
(2 x 20 = 40)

1. Etiopathogenesis of bladder exstrophy and describe the steps of primary exstrophy repair.
2. Natural history of benign prostatic hyperplasia and the principles of its medical management.

II. Write notes on:  
(10 x 6 = 60)

1. Neourethral coverage in hypospadias repair
3. Organ sparing treatment of penile carcinoma.
5. Detrusor external sphincter dyssynergia.
7. Urological applications of botulinum toxin.
8. Jejunal conduit syndrome
10. BCG failure – management.
MODEL QUESTION PAPER
M.Ch - UROLOGY
Paper - III REGIONAL SYSTEMIC UROLOGY

Time: 3 hours                         Maximum: 100 marks
Answer ALL questions
Draw diagrams wherever applicable

I. Elaborate on:  (2 x 20 = 40)

1. Evaluation of the living kidney donor and the pathophysiology of chronic rejection.
2. Pathophysiology of erectile dysfunction and the management options.

II. Write notes on:  (10 x 6 = 60)

1. Bulking agents in the management of female SUI.
2. Bioeffects of shock wave lithotripsy.
3. Evaluation and management of asymptomatic microscopic haematuria.
4. Early cystectomy in T1G3 transitional cell carcinoma of the bladder-pros and cons.
5. Tumor markers in bladder cancer.
7. Mainz II pouch.
8. Uretero-colonic anastomotic techniques.
9. Role of oxidants in male infertility.
10. Genetic basis of prostate cancer.
MODEL QUESTION PAPER
M.Ch - UROLOGY
Paper - IV RECENT ADVANCES IN UROLOGY

Time: 3 hours  Maximum: 100 marks

Answer ALL questions

Draw diagrams wherever applicable

I. Elaborate on:  

(2 x 20 = 40)

1. Etiology and management of bladder diverticulum.
2. Controversies in PSA screening for prostate cancer.

II. Write notes on:  

(10 x 6 = 60)

1. PCA 3.
2. Second TUR in high risk bladder cancer.
3. Three dimensional reconstruction in CT scanning.
4. Role of diffusion weighted MRI imaging in urological cancers.
5. Role of FNAC in a renal mass lesion.
7. XDR tuberculosis.
8. Steroid free immunosuppression regimen.
10. Intravesical treatment for overactive bladder.
10. RECOMMENDED BOOKS AND JOURNALS

44. Testicular chromosome structure and gene expression, Hardy, 2008.
46. Evidence-based urology, Dahm, 2010.
47. Interventional techniques in uro-oncology, Arya, 2011.