



STANDARD SETTING IN WACP EXAMS

THE FAMILY MEDICINE EXPERIENCE

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Some reflections on our exams

- In the membership theory paper, how confident are you that a candidate that scores 50% has adequate knowledge for this level of training? (on a scale of 0 - 5)
- In the Membership OSCE exam, how confident are you that a candidate that scores 50% is clinically competent? (scale of 0 - 5)
- Will a successful candidate in the membership exam perform better than an unsuccessful one in clinical practice? Yes No Not sure
- If a candidate registered but missed the April exam, then sat and failed the Oct exam, is there a possibility that she could have passed if she sat the April exam? Yes No



Goal

To invite us to reflect on the defensibility of our pass/fail judgement at the College exams

To encourage us to adopt standard and defensible methods in arriving at a pass mark for our exams



Objectives

At the end of the lecture participants will be able to:

- Discuss the principles and practice of standard setting to determine pass mark in high-stakes exams
- Apply standard setting in our Faculty exams

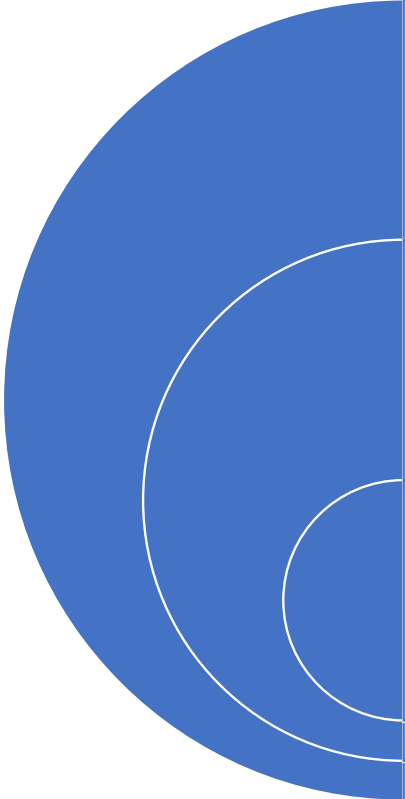


Outline

- Introduction
- The Philosophy of Medical Residency
- The role of competency-based curriculum
- The role of Competence-based Assessment
- Assessment methods in the WACP Exams
- Determining pass mark in Medical Specialist Exams
- The Family Medicine experience
 - MCQs, Picture test, OSCE,
- Short practice session
- Challenges and recommendations



The Philosophy of Medical Residency



Residency envisages a rigorous, immersive, hands-on **apprenticeship** transforming the doctor into a competent independent specialist by learning through service.

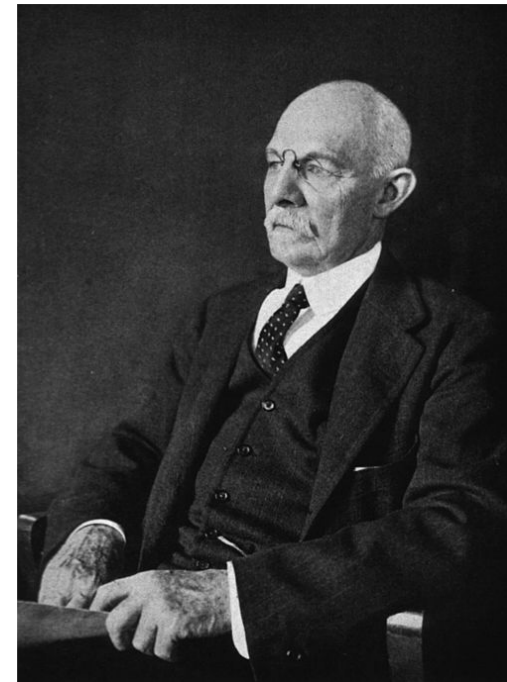
Progressive autonomy – moving from high supervision to independent practice gaining confidence and responsibility as his competence increases.

Clinical equanimity – maintaining calmness and composure and clear judgement during high-stakes, stressful and sometimes life-threatening clinical situations



The Philosophy of Medical Residency

- Professional identity formation
- Constant evaluation and feedback
- Team-based care
- ‘Master trainer’ – release of the ‘apprentice’
- The College as a body of ‘master trainers’

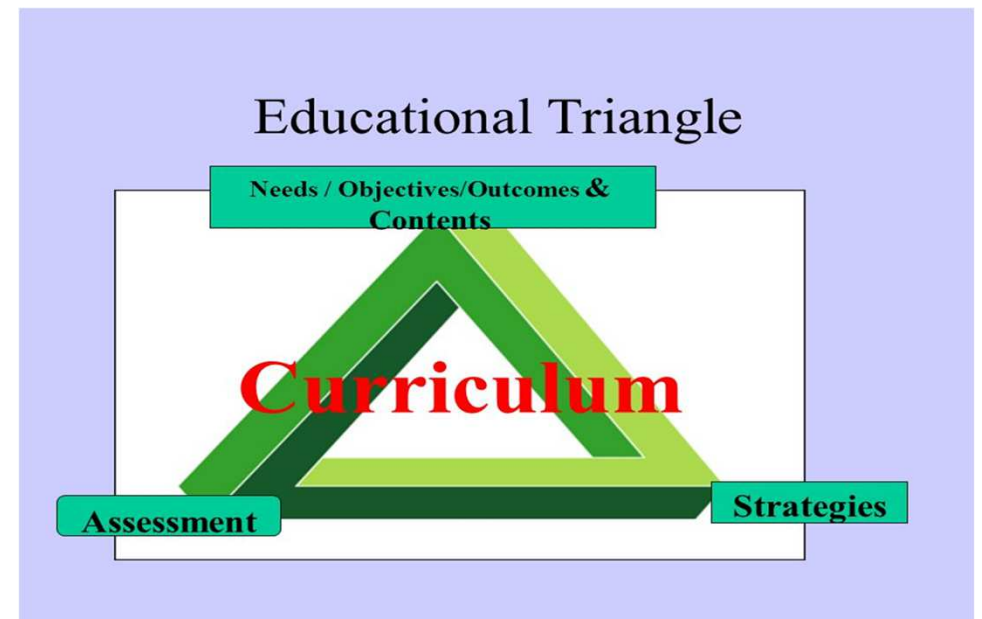


Dr William Halsted



Competency based Curriculum

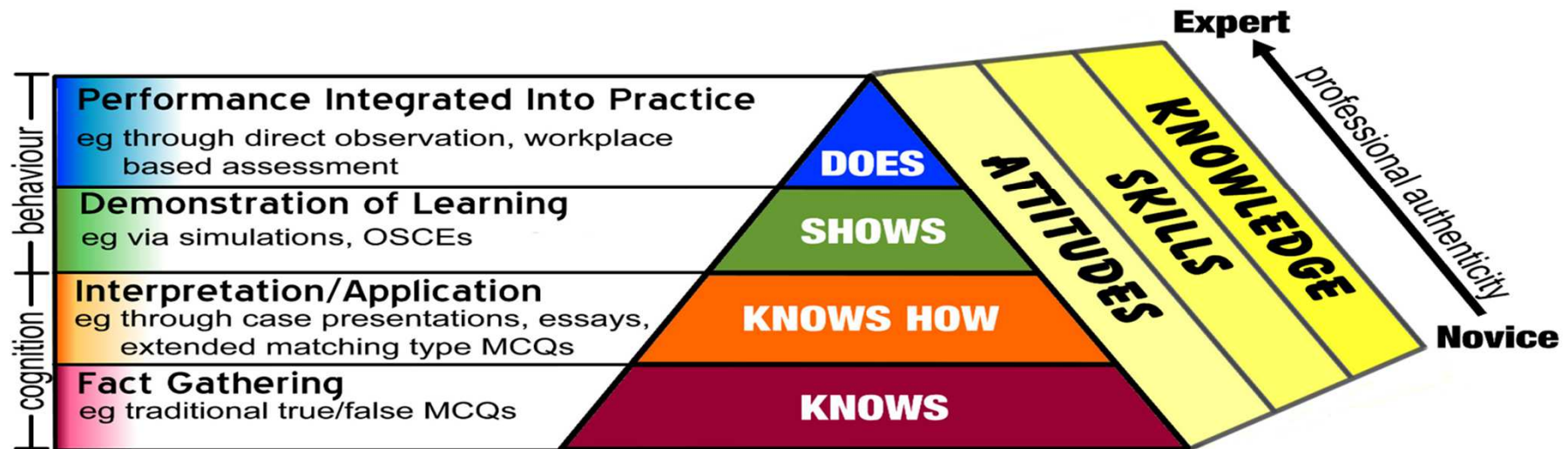
- Modern residency runs on competency-based curricula
- 2016 College curricula review
- Modular learning
- Workplace-based assessment and feedback
- Use of portfolio of learning



Competency based Assessments

MILLER'S PRISM OF CLINICAL COMPETENCE (aka Miller's Pyramid)

it is only in the "does" triangle that the doctor truly performs



Based on work by Miller GE, *The Assessment of Clinical Skills/Competence/Performance*; Acad. Med. 1990; 65(9); 63-67
Adapted by Drs. R. Mehay & R. Burns, UK (Jan 2009)

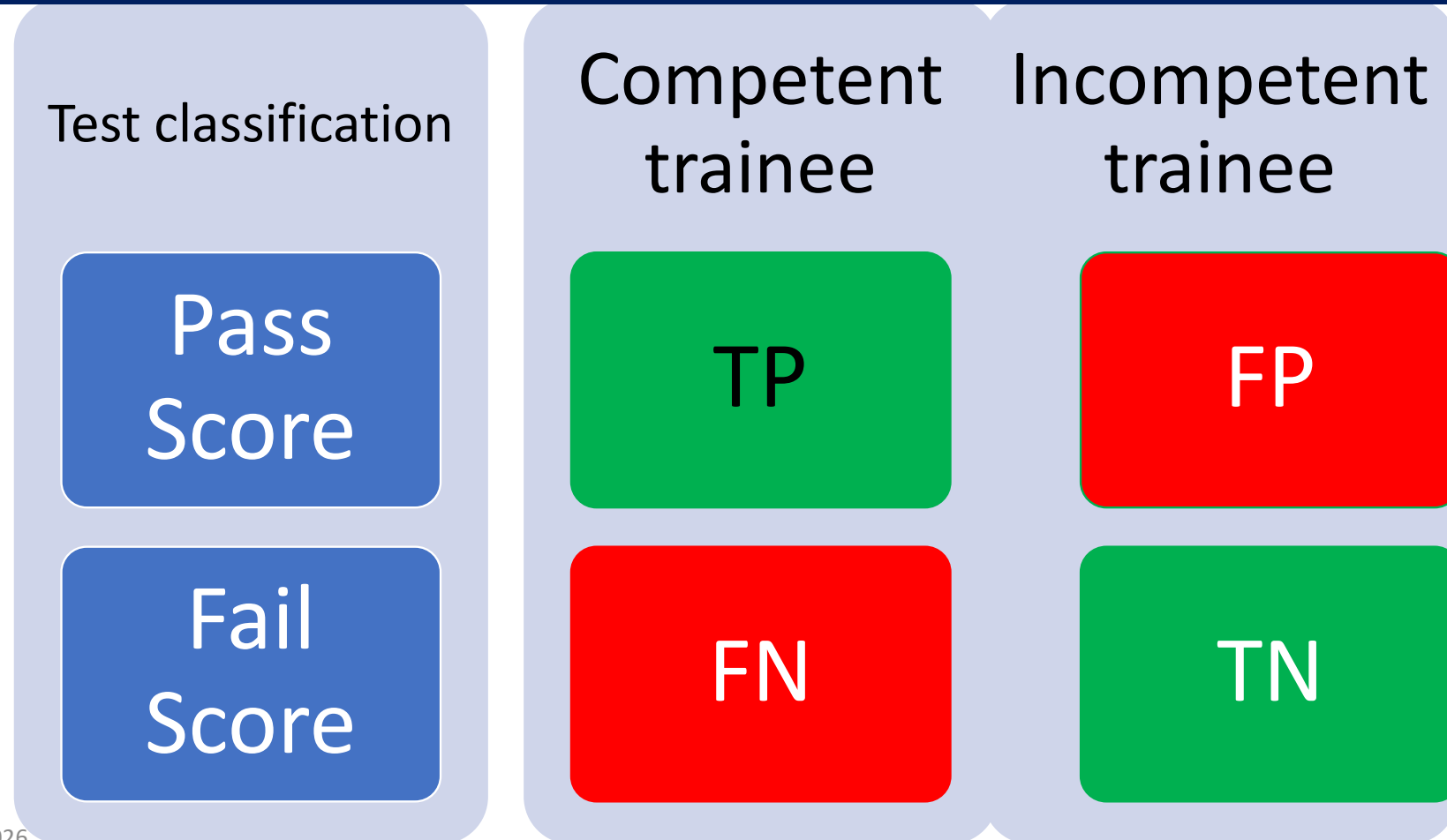


Assessment methods in WACP exams

- Written tests – MCQs, Essays,
- Clinical exams – OSCE, OSPE, Long case, PACSE
- Oral – General orals, Logbook orals
- Practicals
- Picture tests
- Dissertation defense
- Casebook/PMR/Autopsy book defense
- Portfolio defense



Translating exam scores into competency judgement



Determining Pass mark in Medical Specialist Exams

Assumptions

- The assessment has content validity
The questions are of appropriate difficulty level
- The questions are capable of discriminating between competent and incompetent candidates
- The test can reasonably predict physician's performance in practice

CHARACTERISTICS OF GOOD TEST

1. VALIDITY
2. RELIABILITY
3. USABILITY
4. SCORABILITY
5. ECONOMICAL
6. TIME
7. SPECIFICITY
8. OBJECTIVITY
9. EQUILIBRIUM



Determining Pass mark in Medical Specialist Exams

What should not determine the pass score:

- Fixed percentage (e.g. 50%)
 - this is arbitrary and indefensible
- Norm-Referenced grading (e.g. bottom 20% should fail)
 - it is inappropriate for licensing high-stakes medical specialist exam
- Avoid compensatory aggregate pass mark



Determining Pass mark in Medical Specialist Exams

What should determine the pass score:

- Criterion-referenced standard-setting methods.
- The pass score should translate to the least acceptable level of competence
- The mark is determined by experts using an appropriate standard-setting method



Criterion-Referenced methods

- Modified Angoff method
- Borderline Regression Method
- Ebel Method



Criterion-Referenced methods

- The pass mark once set is independent
- The passing standard is absolute
- If all candidates are competent, all should pass
- If no candidate is competent, all should fail
- As much as possible, conjunctive standards should be used
-



The Family Medicine Experience

- Discomfort with the 50%
- Need for an evidence-based method
- Low pass rate in some papers
- Need to use peer-referencing
- Concerns about fairness
- Variability of exam papers
- Concerns about the shift to OSCE
- Defensibility of the overall pass rate



“Students can
escape bad
teaching, but
they can’t
escape bad
assessment”

David Boud 1995



The Family Medicine Experience

- Ensuring blueprinting
- Engaging in Questions drive among fellows
- Competency-based curriculum
- Harmonization between curriculum, training methods and assessment methods
- Update courses and TOTs on exam related issues
- Special training programmes for examiners



Table of specification – Memb CBT – Fam med

s/n	Course Content & Membership Rotations	% Of Overall Content	Rotations (in weeks)	Credit Units	No of MCQs	Level 1 14%	Level 2 72.5%	Level 3 13.5%
1	Family Med (+ LM & PC)	12.0	12	12	24	4	17	3
2	Surgery	12.0	12	12	24	4	17	3
3	Maternal Health	12.0	12	12	24	4	17	3
4	Internal Medicine	8.0	8	8	16	3	11	2
5	Mental Health	8.0	8	8	16	3	11	2
6	Child Health	8.0	8	8	16	3	11	2
7	Accident & Emergency	8.0	8	8	16	3	11	2
8	Ophthalmology	4.0	4	4	8	1	6	1
9	Anaesthesia	4.0	4	4	8	1	6	1
10	Radiology	4.0	4	4	8	1	6	1
11	Com. Med & PHC	4.0	4	4	8	1	6	1
12	ENT	2.0	4	2	4	-	3	1
13	Laboratory Medicine	8.0	8	8	16	3	11	2
14	Oral Health	2.0	2	2	4	-	3	1
15	Research Methodology	2.0		2	4	-	3	1

5/4/2026

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Standard setting for the Picture test

- Picture test of five stations
- We set up a 10-12 member panel for the standard setting using the Angoff method
- They go through the pictures and the questions one by one and determine the proportion of minimally competent candidates that will get the questions correctly
- The aggregate of their responses gives us the pass mark
- We have used the result to modify the weighting of the picture test in the overall score in the clinical exam



Picture test Oct 2022

	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10		
1A	40	40	40	45	60	50	45	50	50	60	480	48
1B	70	80	80	70	70	60	75	65	70	60	700	70
2A	40	50	60	60	60	40	60	60	40	40	510	51
2B	60	50	60	60	60	60	70	65	60	70	615	61.5
3A	50	70	70	60	50	65	55	70	50	60	600	60
3B	50	40	50	35	40	50	45	50	40	50	450	45
4	35	20	40	50	30	40	25	25	35	30	330	33
5A	30	40	20	50	40	50	50	25	30	50	385	38.5
5B	40	60	40	40	40	50	45	45	40	40	440	44
5C	50	60	70	65	60	50	40	80	60	70	605	60.5
												51.15



Standard setting for the OSCE exam

- We have an OSCE exam consisting of 10 active stations:
 - history taking, physical examination, management plan presentation, counselling, emergency life saving procedures
- The checklist for each station measures performance-based scores and global competency rating for each candidate
- The global competency rating has four scales: incompetent, borderline competent, clearly competent and excellent



Standard setting for the OSCE exam

- Assessors are instructed to award a global rating score for the candidate before summing up the checklist score.
- All candidates that obtain borderline rating in any of the stations are identified. Their total scores in the OSCE are summed up and the average total score determined.
- This average score by the borderline candidates becomes the pass mark in the OSCE.



STATION NO: CHECKLIST CODE: A1 Candidate's No: _____

Item	Correctly done	Partially done	Incorrectly done	Not done
1. Relationship building				
Introduces self and ascertains patients name	1	0.5	0	0
Establishes Reason for visit	1	0	0	0
2. Focused History Checklist				
		Correctly asked	Partially asked	Not asked
Biodata	Name	1	0	0
	Age	1	0	0
	Address	1	0	0
	Occupation	1	0	0
History of swelling	Duration, size, pain	1.5	0.5	0
	Aggravating/Relieving factors	1	0.5	0
	Constipation, straining on micturition	1	0.5	0
	Chronic cough, abdominal swelling	1	0.5	0
	Injury or surgery in the groin region	1	0.5	0
	Lifting of heavy objects	1	0	0
Systemic review	Vomiting, diarrhea, dysuria	1	0.5	0
	Abdominal pain	1	0	0
FIFE	Feelings, Ideas	1	0.5	0
	Functional impairment, Expectations	1	0.5	0
Past medical, drug and allergy history	Previous surgery, admissions,	1	0.5	0
	Hypertension, Diabetes	1	0.5	0
	Other significant medical history	2	1	0
Family and Social History	Family history of hernia	1	0	0
	Smoking, Alcohol, Exercise	1.5	0.5	0
	Income, Source of health expenditure	2	1	0
3. Communication skills				
Listening skills - Consistently attentive to answers & concerns	2	1	0	0
Questioning skills- Confident and skillful	2	1	0	0
Organization of interview - Purposeful, integrated handling of encounter	3	1	0	0
Global Competence Rating irrespective of scores (Tick one before adding scores)				
Excellent	Clear Pass	Borderline Pass	Clear Fail	
Total score: _____ / 32 Name and Signature: _____				

Standard setting for the MCQ papers

- We have the following mcq papers:
- Primary exam paper – 200mcqs
- Membership paper 1 – 200mcqs
- Membership paper 2 – 100 mcqs
- An Angoff panel of 10-15 members
- The panel sits during CBT exams
- Poll feature on zoom platform



Standard setting for the MCQ papers

- The panel members:
 - HODs, and Training coordinators
 - Active trainers
 - a mixture of age and level of experience
- Training on Angoff procedure
- Panel members go through each of the mcqs
- provides the proportion of 'minimally competent' candidates that would answer the question correctly



Standard setting for the MCQ papers

- The 'minimally competent' candidate for the membership is defined as one who:
 - possesses just adequate level of knowledge, skills, and attitudes required to practice safely and with less supervision at the level of a senior registrar.
 - is considered competent and safe, even if he has some gaps in knowledge.
- The average obtained from summing up all the data provided for all the questions by all panel members provides the pass mark for the paper.



Standard setting for the MCQ papers

- We have used this method consistently in the last five to six years
- The pass marks obtained from the standard setting ranged from 55 to 79% depending on the paper
- In the last CBT exams the competency pass mark for the mcq papers were:
 - Primary paper - 60.5%
 - Membership paper 1 - 61%
 - Membership paper 2 – 79%
 - Membership final pass mark - 67%
- With this method, the pass marks are considered objective, evidence-based and defensible before stakeholders



	Coor Name/Email/Addr	Submitted	National	Agency	Regional	Total	National	Regional	Other	States	Other	By
1	Stephen Engmann	02/19/202	90%	90%	50%	60%	90%	60%	40%	80%	40%	80%
2	Mohammadou Kabir C	02/19/202	80%	80%	70%	80%	80%	70%	70%	80%	70%	80%
3	Dr Affiong John	02/19/202	90%	10%	70%		10%	70%	80%	20%	90%	10%
4	Nnenna Okafor	02/19/202	20%	60%	30%	50%	30%	30%	30%	20%	10%	10%
5	Umeh Chioma Roselin	02/19/202	70%	90%	40%	80%	50%	40%	50%	90%	60%	80%
6	Tolulope Onafeso	02/19/202	40%	70%	50%	80%	40%	40%	30%	50%	50%	40%
7	Sunday Malomo	02/19/202	70%	80%	40%	80%	60%	70%	80%	60%	50%	30%
8	muttaka	02/19/202	80%	100%	50%	100%	20%	50%	30%	80%	50%	90%
9	SERIKI JIDE	02/19/202	90%	90%	80%	80%	70%	60%	60%	70%	60%	60%
10	Esemena Isiauwe	02/19/202	50%	100%	60%	80%	50%	40%	30%	60%	30%	50%
11	Marian Opoku- Agyak	02/19/202	100%	100%	80%	100%	100%	100%	80%	100%	80%	100%
12	AbdulGafar Olawumi	02/19/202	40%	50%	50%	60%	60%	60%	70%	70%	60%	60%
13	Dr REGINALD-AGUOC	02/19/202	80%	100%	50%	60%	70%	50%	50%	50%	60%	70%

Standard setting practice

A SHORT ACTIVITY

- A poll consisting of just 6 questions
- Imagine a minimally competent membership candidate in your faculty
- Is the candidate likely to answer the question correctly?
- If yes enter 1, if no enter 0
- We have three minutes for the poll



Challenges

- Standard setting takes time, energy and resources
- Best done physically but cost is an issue
- The online method we currently use for the mcq papers has its own downside and is risky for the safety of the questions
- As of now there is no budget line for remunerating the panel members
- The data generated is very large and needs logistic support from the College for prompt analysis during the exam



Recommendations

- Deliberate quality improvement programme
- Further training on appropriate standard-setting methods
- Strengthen the Exam department to provide support
- Budget line for physical standard setting exercise
- Provide facilitation for all Faculties to employ standard setting.

One day, stakeholders and the society will demand transparency and accountability regarding our pass/fail judgements



Final Thoughts

- ***We live in an era where celebrities and social media will question why a patient with grade 4 brain cancer was allowed to die in your practice!***
- ***One day, stakeholders and the society will demand transparency and accountability regarding our pass/fail judgements***
- ***Where the senator will question why his uncle's son fail the fellowship exam!***
- ***Let us not wait till that time. Let us make that demand on ourselves now.***



References

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Thank you for your participation!

