Prescribing Safety Assessment

Short review of its relationship to the Prescribing Competency Framework

Prescribing Safety Assessment

The Prescribing Safety Assessment (PSA) is an on-line assessment of competency in the safe and effective use of medicines, developed by the British Pharmacological Society (BPS) and MSC Assessment (MSCA). The PSA is an 'open book' assessment with candidates having access to the *British National Formulary* (BNF) throughout. The PSA is delivered online from a 'cloud-based' server and comprises 60 question items in 8 sections containing item styles that cover different aspects of the clinical activity undertaken by prescribers (Figure 1). The specific competencies included in the assessment blueprint include prescribing, reviewing prescriptions, planning management, providing information, calculation skills, detecting and managing adverse drug reactions, monitoring the effects of medicines and interpreting data. These competencies were chosen to reflect the activities that might be required of a recently graduated doctor. Question items can be set in any one of 7 different clinical settings and the assessment lasts for 2 hours with 25% extra time allowed for candidates with reasonable adjustment allowances.

The PSA was originally designed in 2010 and this was followed by 2 years of development work including creation of a question item bank, building of an online delivery system and formulation of all of the applicable regulations. The PSA was first piloted in 2012 and 2013, before being fully implemented in 2014 (PSA2014). In 2014, 7,144 UK final year medical students took one of the five PSA papers available, with an overall pass rate of 94%. In 2015, 7,576 final year medical students in all 31 UK medical schools sat one of four PSA papers with an overall pass rate of 91%.

MED - SURG - ELD - PED - PSYCH - O&G - GP

Section 8 Data Interpretation · Section 1 Prescribing · Section 2 Prescription Review · Section 7 Drug Monitoring · Prescribing Safety Assessment · Section 3 Planning Management · Section 6 Adverse Drug Reactions · Section 5 Calculation Skills · Section 4 Providing Information

60 items - 120 minutes - 200 marks

For the first time in 2016, health officials from the four UK countries stipulated that all new Foundation Year 1 doctors would be required to pass the PSA. Any UK medical students who did not pass the PSA at medical school and overseas entrants into the Foundation Programme had an opportunity to sit the PSA during their induction week in July. Those not passing this sitting would be expected to undergo a programme of remediation prior to retaking the PSA in November 2016. This clearly increased the stakes for the candidates compared to previous years. In PSA2016, 7,343 final year medical students sat the PSA

Prescribing Competency Framework

Doctors write the vast majority of prescriptions in the UK and, like dentists, are entitled to prescribe by virtue of their primary qualification. More recently, prescribing rights (independent and supplementary) have been granted to a range of other healthcare professions who are able to prescribe within their scope of practice once they have completed an approved education programme. This extension of prescribing responsibilities to other professional groups raises the question as to whether all independent prescribers, from whichever professional background achieve the same degree of competency. In an effort to clarify the generic competencies of all prescribers the development of a single prescribing competency framework has been led by the Royal Pharmaceutical Society (RPS) on behalf of all the prescribing professions in the UK. This built on the

framework originally published by the National Prescribing Centre/National Institute for Health and Clinical Excellence (NICE) in 2012.

The purpose of this brief review is look at how the prescribing competencies identified in the framework map to the 8 sections of the PSA in order to understand whether the PSA might form the basis of a assessment that might provide assurance that candidates had achieved the competencies that it identifies.

Competency mapping

The following table highlights the association between the 10 main competencies and 65 sub-competencies of the Prescribing Competency Framework and the 8 sections of the Prescribing Safety Assessment. Those with clear coverage are highlighted in black, those with some coverage in grey and those with no coverage in white.

PRESCRIBING COMPETENCY FRAMEWORK		PRESCRIBING SAFETY ASSESSMENT
1	**Assess the patient**	
1.1	Takes an appropriate medical, social and medication history including allergies and intolerances.	The PSA cannot assess history talking directly and this generic professional skill is better suited to workplace-based assessment.
1.2	Undertakes an appropriate clinical assessment.	The PSA cannot assess physical examination directly and this generic professional skill is better suited to workplace-based assessment.
1.3	Accesses and interprets all available and relevant patient records to ensure knowledge of the patient's management to date.	The PSA cannot assess the ability to review medical records directly and this generic professional skill is better suited to workplace-based assessment.
1.4	Requests and interprets relevant investigations necessary to inform treatment options.	The PSA tests ordering and interpreting investigations related to drug therapy within TDM and DAT items.
1.5	Makes, confirms or understands, the working or final diagnosis by systematically considering the various possibilities (differential diagnosis).	The PSA may require candidates to make a diagnosis or differential diagnosis based on data presented (e.g. PWS, MAN, ADR-B, ADR-D).
1.6	Understands the condition(s) being treated, their natural progression and how to assess their severity, deterioration and anticipated response to treatment.	The PSA does not generally require detailed knowledge of the natural progression of clinical conditions.
1.7	Reviews adherence to and effectiveness of current medicines.	The PSA cannot assess history talking directly and this generic professional skill is better suited to workplace-based assessment. The review of effectiveness is tested in TDM and DAT items.
1.8	Refers to or seeks guidance from another member of the team, a specialist or a prescribing information source when necessary.	The PSA does not allow candidates to refer problems to others and requires a decision to be made by the candidate.
2	**Consider the options**	
2.1	Considers both non-pharmacological (including no treatment) and pharmacological approaches to modifying disease and promoting health.	The PSA requires candidates to make a decision between different potential treatment approaches in MAN, ADR-D and DAT items.
2.2	Considers all pharmacological treatment options including optimising doses as well as stopping treatment (appropriate polypharmacy, de-prescribing).	Choosing pharmacological treatment options is tested in PWS, MAN and ADR-D items. Optimising doses is tested in PWS, MAN and DAT items. Stopping treatment is tested in REV items.

PRESCRIBING COMPETENCY FRAMEWORK		PRESCRIBING SAFETY ASSESSMENT
2.3	Assesses the risks and benefits to the patient of taking or not taking a medicine or treatment.	Choosing between treatment or no treatment is tested in **REV**, **MAN** and **DAT** items.
2.4	Applies understanding of the mode of action and pharmacokinetics of medicines and how these may be altered (e.g. by genetics, age, renal impairment, pregnancy).	Selecting rational drug treatment based on patient-specific pharmacokinetic factors is tested in **PWS**, **REV**, **MAN** and **DAT** items.
2.5	Assesses how co-morbidities, existing medication, allergies, contraindications and quality of life impact on management options.	Selecting rational drug treatment based on patient-specific co-morbidities is tested in **PWS**, **REV** and **MAN** items.
2.6	Takes into account any relevant patient factors (e.g. ability to swallow, religion) and the potential impact on route of administration and formulation of medicines.	Selecting rational drug treatment based on patient-specific preference or likely adherence is tested in **PWS** and **MAN** items.
2.7	Identifies, accesses, and uses reliable and validated sources of information and critically evaluates other information.	The PSA is an 'open book' assessment that encourages candidates to draw on the British National Formulary as a source of guidance. This is particularly relevant in **PWS**, **REV**, **MAN**, **COM**, **ADR** items.
2.8	Stays up-to-date in own area of practice and applies the principles of evidence-based practice, including clinical and cost-effectiveness.	The PSA items are based on evidence-based practice and cost-effective use of resources. This is particularly evident in **PWS**, **REV**, **MAN** and **DAT** items.
2.9	Takes into account the wider perspective including the public health issues related to medicines and their use and promoting health.	Broader public health issues are relevant to the use of certain medicines (e.g. antimicrobials, opiate analgesics) and these are mainly tested in **PWS** and **MAN** items.
2.10	Understands antimicrobial resistance and the roles of infection prevention, control and antimicrobial stewardship measures.	The PSA tests principles of antimicrobial stewardship in **PWS**, **REV**, **MAN** and **DAT** items.
3	**Reach a shared decision**	
3.1	Works with the patient/carer in partnership to make informed choices, agreeing a plan that respects patient preferences including their right to refuse or limit treatment.	The PSA cannot assess direct carer-patient interaction or achieving agreement around a treatment plan and these professional skills are better suited to workplace-based assessment.
3.2	Identifies and respects the patient in relation to diversity, values, beliefs and expectations about their health and treatment with medicines.	The PSA cannot assess direct carer-patient interaction or empathy and these skills are better suited to workplace-based assessment.
3.3	Explains the rationale behind and the potential risks and benefits of management options in a way the patient/carer understands.	The PSA assesses transmission of clear and appropriate explanations in **COM** items.
3.4	Routinely assesses adherence in a non-judgemental way and understands the different reasons non-adherence can occur (intentional or non-intentional) and how best to support patients/carers.	The PSA cannot directly assess exploration of adherence and these skills are better suited to workplace-based assessment.
3.5	Builds a relationship which encourages appropriate prescribing and not the expectation that a prescription will be supplied.	The PSA cannot assess direct carer-patient interaction or managing expectations and these generic professional skills are better suited to workplace-based assessment.

PRESCRIBING COMPETENCY FRAMEWORK		PRESCRIBING SAFETY ASSESSMENT
3.6	Explores the patient/carers understanding of a consultation and aims for a satisfactory outcome for the patient/carer and prescriber.	The PSA cannot assess direct carer-patient interaction during a consultation and these skills are better suited to workplace-based assessment.
4	**Prescribe**	
4.1	Prescribes a medicine only with adequate, up-to-date awareness of its actions, indications, dose, contraindications, interactions, cautions, and side effects.	The PSA assesses prescriber awareness of the actions, indications, contraindications and adverse effects or medicines in **PWS**, **REV**, **MAN**, **COM**, **ADR** and **DAT** items.
4.2	Understands the potential for adverse effects and takes steps to avoid/minimise, recognise and manage them.	The PSA assesses the recognition of potential adverse effects in **PWS**, **REV**, **MAN**, **COM**, **ADR** and **TDM** items. Management of adverse effects is assessed in **ADR-D** items.
4.3	Prescribes within relevant frameworks for medicines use as appropriate (e.g. local formularies, care pathways, protocols and guidelines).	The PSA is based on prescribing guidance provided by the *British National Formulary* but cannot assess against more specific local guidance.
4.4	Prescribes generic medicines where practical and safe for the patient and knows when medicines should be prescribed by branded product.	The PSA encourages generic prescribing other than in appropriate exceptions and this is demonstrated in the **PWS** items.
4.5	Understands and applies relevant national frameworks for medicines use (e.g. NICE, SMC, AWMSG and medicines management/ optimisation) to own prescribing practice.	The PSA explores adherence to national guidance in **PWS**, **MAN**, **TDM** and **DAT** items.
4.6	Accurately completes and routinely checks calculations relevant to prescribing and practical dosing.	The PSA assesses calculation skills and numeracy in the **CAL** items.
4.7	Considers the potential for misuse of medicines.	The potential for misuse of medicines can be assessed in **PWS**, **MAN**, **ADR-A** and **ADR-D** items.
4.8	Uses up-to-date information about prescribed medicines (e.g. availability, pack sizes, storage conditions, excipients, costs).	The PSA rarely considers these data in any detail.
4.9	Electronically generates or writes legible unambiguous and complete prescriptions which meet legal requirements.	The PSA assesses prescription writing in **PWS** items.
4.10	Effectively uses the systems necessary to prescribe medicines (e.g. medicine charts, electronic prescribing, decision support).	The PSA assesses appropriate use of basic electronic prescribing skills in **PWS** items. At present there is no associated decision support.
4.11	Only prescribes medicines that are unlicensed, 'off-label', or outside standard practice if satisfied that an alternative licensed medicine would not meet the patient's clinical needs.	The PSA treats appropriate selection of 'off-label', unlicensed or non-standard approaches in **PWS** and **MAN** items.
4.12	Makes accurate legible and contemporaneous records and clinical notes of prescribing decisions.	The PSA cannot assess record keeping directly and this generic professional skill is better suited to workplace-based assessment.
4.13	Communicates information about medicines and what they are being used for when sharing or transferring prescribing responsibilities/ information.	The PSA tests appropriate selection of information to communicate in **COM** items. It cannot assess verbal communication directly and this generic professional skill is better suited to workplace-based assessment.
5	**Provide information**	

PRESCRIBING COMPETENCY FRAMEWORK		PRESCRIBING SAFETY ASSESSMENT
5.1	Checks the patient/carer's understanding of and commitment to the patient's management, monitoring and follow-up.	The PSA tests appropriate selection of information to communicate in **COM** items. It cannot assess verbal communication directly and this generic professional skill is better suited to workplace-based assessment.
5.2	Gives the patient/carer clear, understandable and accessible information about their medicines (e.g. what it is for, how to use it, possible unwanted effects and how to report them, expected duration of treatment).	The PSA tests appropriate selection of information to communicate in **COM** items. It cannot assess verbal communication directly and this generic professional skill is better suited to workplace-based assessment.
5.3	Guides patients/carers on how to identify reliable sources of information about their medicines and treatments.	The PSA tests does not assess guiding patients to resources and this generic professional skill is better suited to workplace-based assessment.
5.4	Ensures that the patient/carer knows what to do if there are any concerns about the management of their condition, if the condition deteriorates or if there is no improvement in a specific time frame.	The PSA tests appropriate selection of information to communicate in **COM** items.
5.5	When possible, encourages and supports patients/carers to take responsibility for their medicines and self-manage their conditions.	The PSA tests does not assess techniques for motivating patients or self-management and these generic professional skills are better suited to workplace-based assessment.
6	**Monitor and review**	
6.1	Establishes and maintains a plan for reviewing the patient's treatment.	The PSA tests knowledge of monitoring for the beneficial or adverse effects of medicines in **TDM** items.
6.2	Ensures that the effectiveness of treatment and potential unwanted effects are monitored.	The PSA tests knowledge of monitoring for the beneficial or adverse effects of medicines in **TDM** items.
6.3	Detects and reports suspected adverse drug reactions using appropriate reporting systems.	The PSA tests detection of adverse drug reactions in **REV**, **ADR-B**, **ADR-C**, and **TDM** items. Testing the use of reporting systems would be better suited to workplace-based assessment.
6.4	Adapts the management plan in response to on-going monitoring and review of the patient's condition and preferences.	The PSA tests the ability to adapt management plans in the light of clinical circumstances in **REV**, **MAN** and **DAT** items
7	**Prescribe safely**	
7.1	Prescribes within own scope of practice and recognises the limits of own knowledge and skill.	The PSA does not allow candidates to refer decisions to others and provides items that should be within the experience of the candidate.
7.2	Knows about common types and causes of medication errors and how to prevent, avoid and detect them.	The PSA assesses the ability to prevent, avoid and detect medication is tested in **REV**, **COM** and **TDM** items. The specific errors related to calculations are tested in CAL items.
7.3	Identifies the potential risks associated with prescribing via remote media (telephone, email or through a third party) and takes steps to minimise them.	The PSA does not directly assess the candidate's ability to identify the risks of remote prescribing although this could form the basis of some item scenarios.

PRESCRIBING COMPETENCY FRAMEWORK		PRESCRIBING SAFETY ASSESSMENT
7.4	Minimises risks to patients by using or developing processes that support safe prescribing particularly in areas of high risk (e.g. transfer of information about medicines, prescribing of repeat medicines).	The PSA does not directly assess the candidate's ability to create safe prescribing systems although transfer of information is tested in **COM** items.
7.5	Keeps up to date with emerging safety concerns related to prescribing.	The PSA assesses recognition of safety concerns in **PWS**, **REV**, **MAN**, **COM**, **ADR**, **TDM** and **DAT** items.
7.6	Reports prescribing errors, near misses and critical incidents, and reviews practice to prevent recurrence.	The PSA does not assess the reporting process specifically and this skill would be better assessed as part of a workplace based assessment.
8	**Prescribe professionally**	
8.1	Ensures confidence and competence to prescribe are maintained.	The PSA does not directly assess professionalism in the approach to continuing professional education.
8.2	Accepts personal responsibility for prescribing and understands the legal and ethical implications.	The PSA does not directly assess attitudes towards professional responsibility of prescribers.
8.3	Knows and works within legal and regulatory frameworks affecting prescribing practice (e.g. controlled drugs, prescribing of unlicensed/off label medicines, regulators guidance, supplementary prescribing).	The PSA does not directly assess knowledge of legal and regulatory frameworks and this skill would be better assessed as part of a workplace based assessment.
8.4	Makes prescribing decisions based on the needs of patients and not the prescriber's personal considerations.	The PSA encourages candidates to consider patients when making treatment decisions but rarely challenges candidates with potential conflicts of interest.
8.5	Recognises and deals with factors that might unduly influence prescribing (e.g. pharmaceutical industry, media, patient, colleagues).	The PSA does not directly assess the ability to cope with potential influences of the pharmaceutical industry.
8.6	Works within the NHS/organisational/regulatory and other codes of conduct when interacting with the pharmaceutical industry.	The PSA does not directly assess interactions with the pharmaceutical industry.
9	**Improve prescribing practice**	
9.1	Reflects on own and others prescribing practice, and acts upon feedback and discussion.	The PSA assesses the ability of candidates to reflect on the prescribing of others in **REV** items.
9.2	Acts upon colleagues' inappropriate or unsafe prescribing practice using appropriate mechanisms.	The PSA assesses the ability of candidates to alter inappropriate of unsafe prescribing in **REV** and **DAT** items.
9.3	Understands and uses available tools to improve prescribing (e.g. patient and peer review feedback, prescribing data analysis and audit).	The PSA does not directly assess the ability of candidates to gather aggregated data on their prescribing in order to improve prescribing.
10	**Prescribe as part of a team**	
10.1	Acts as part of a multidisciplinary team to ensure that continuity of care across care settings is developed and not compromised.	The PSA does not directly assess the ability of candidates to work join a multidisciplinary team although recognises the importance of teamwork.
10.2	Establishes relationships with other professionals based on understanding, trust and respect for each other's roles in relation to prescribing.	The PSA does not directly assess the ability of candidates to work join a multidisciplinary team although recognises the importance of teamwork.
10.3	Negotiates the appropriate level of support and supervision for role as a prescriber.	The PSA does not directly assess the ability of prescribers to negotiate safe working environments.

PRESCRIBING COMPETENCY FRAMEWORK		PRESCRIBING SAFETY ASSESSMENT
10.4	Provides support and advice to other prescribers or those involved in administration of medicines where appropriate.	The PSA tests appropriate selection of information and advice to communicate to other members of the multidisciplinary team in **COM** items.

Abbreviations for PSA question items: **PWS** - prescribing writing, **REV** - prescriptions review, **MAN** - planning management, **COM** - providing information, **CAL** - calculation skills, **ADR** - adverse drug reactions, **TDM** - drug monitoring and **DAT** - data interpretation.

A very simple analysis can be made to show the percentage of the sub-competencies that have coverage from the PSA in each of the 10 major competency areas highlighted in the Prescribing Competency Framework.

PRESCRIBING COMPETENCY FRAMEWORK		
THE CONSULTATION		**Sub-competency coverage**
	Assess the patient	25%
	Consider the options	100%
	Reach a shared decision	17%
	Prescribe	73%
	Provide information	60%
	Monitor and review	100%
PRESCRIBING GOVERNANCE		
	Prescribe safely	33%
	Prescribe professionally	0%
	Improve prescribing practice	67%
	Prescribe as part of a team	25%
Total		**55%**

An alternative representation is to consider which of the 65 sub-competencies are covered by the 8 sections of the Prescribing Safety Assessment.

PRESCRIBING SAFETY ASSESSMENT		
Section		**Sub-competency coverage**
PWS	Prescribing	1.5, 2.2,2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 2.10, 4.2, 4.4, 4.5, 4.7, 4.9, 4.10, 4.11, 7.5
REV	Prescription Review	2.2, 2.3, 2.4, 2.5, 2.7, 2.8, 2.10, 4.1, 4.2, 6.3, 6.4, 7.2, 7.5, 9.1, 9.2
MAN	Planning Management	1.5, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 2.10, 4.1, 4.2, 4.5, 4.7, 4.11, 6.4, 7.5
COM	Providing Information	2.7, 3.3, 4.1, 4.2, 4.13, 5.1, 5.2, 5.4, 7.2, 7.4, 7.5, 10.4
CAL	Calculation Skills	4.6, 7.2
ADR	Adverse Drug Reactions	1.5, 2.1, 2.2, 2.7, 4.1, 4.2, 4.7, 6.3, 7.5
TDM	Drug Monitoring	1.4, 1.7, 4.2, 4.5, 6.1, 6.2, 6.3, 7.2, 7.5
DAT	Data Interpretation	1.7, 2.1, 2.2, 2.3, 2.4, 2.8, 2.10, 4.1, 4.5, 6.4, 7.5

Discussion

The overall impression from this subjective analysis is that the PSA maps well to the Prescribing Competency Framework, covering many of the diverse competencies that it identifies. The matches are strongest in the general areas of considering therapeutic options, prescribing, providing information and monitoring and review.

The primary purpose of the original design of the PSA was to enable new medical graduates that they possess the basic competencies to prescribe and supervise the use of medicines as junior doctors in the NHS. The PSA was intentionally designed to be an assessment that is delivered online. This offers the considerable advantages that (i) it can be widely applied to large numbers of candidates in diverse locations throughout academia, the NHS and overseas, (ii) it is marked fairly and consistently from candidate to candidate, and (iii) it has relatively high reliability. An important disadvantage of this approach is that it is unable to simulate interpersonal interactions that form a critical part of the everyday work of healthcare professionals.

Therefore, although the PSA is well suited to assessing the majority of competencies that rely on knowledge, assessing clinical scenarios and making judgements about medicines it is less suited to some of the competencies based on conversing with patients or interacting with the workspace. Specifically, these include history taking, clinical assessment, records review, seeking guidance from other colleagues, shared decision making and negotiation, record keeping, using reporting processes, ensuring safe working processes, continuing professional development interactions with industry, and team working.

These generic professional competencies are probably better suited to workplace-based assessments that allow individuals to be directly observed in their own working environment. Furthermore, these assessments would also provide an opportunity to emphasise the importance of local protocols and procedures that cannot be included within a national assessment process.

It might be concluded that the existence of a well-established assessment of prescribing competence (the PSA) that has already been applied to around 40,000 medical graduates, offers the opportunity to do some scoping work as to its wider applicability to other professionals looking to demonstrate compliance with the new Prescribing Competency Framework. It is evident from the foregoing analysis that the PSA might offer a useful, easily delivered screening tool for knowledge and clinical decision making but further tools might need to be offered to supervisors to allow them to assess prescribers at a local level.

Simon Maxwell
November 2016