Short Paper

Assessment of Clinical Competence: Designing a Competence Grid for Junior Pharmacists

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Aim. **This paper describes the development of a competency framework for clinical practice undertaken by junior pharmacists.**

Method. **A peer group consisting of clinical practitioners and academics developed competency clusters. Competencies were assigned to each cluster and the associated behaviours described. The resulting "grids" were circulated to clinical practitioners, senior pharmacy managers and junior pharmacists for comment. A four point scale was developed to evaluate performance of the junior pharmacist for each behaviour.**

Outputs. **The competency grids comprise three clusters: personal, problem solving and clinical. These are currently under investigation to determine their measurement properties.**

INTRODUCTION

Society has given health professionals, including pharmacists, the privilege of self-regulation. In order to honour this privilege governing bodies need to ensure that the competence and performance of their members are assured.

Clinical governance was recently introduced as a UK government initiative to assure and improve the quality of clinical services in the National Health Service (Department of Health, 2001). Clinical governance, as a concept, requires professional self-regulation and demonstration of a commitment to lifelong learning.

Competence is defined as the ability to carry out a job or task, whereas ability based on behavioural trends is usually referred to as competency. Miller's pyramid description of competence (Fig. 1, Miller, 1990) indicates that, in clinical practice, the ability to do the job is the key area to be assessed. However in this setting it is a combination of task orientated competence and the behaviourally related competencies that is required to deliver quality care to the patient (Rethans *et al.*, 1991).

Pharmacy practice, and the delivery of pharmaceutical care, has developed rapidly over the last 10 years. The emphasis has moved from being focussed on the supply of medicines
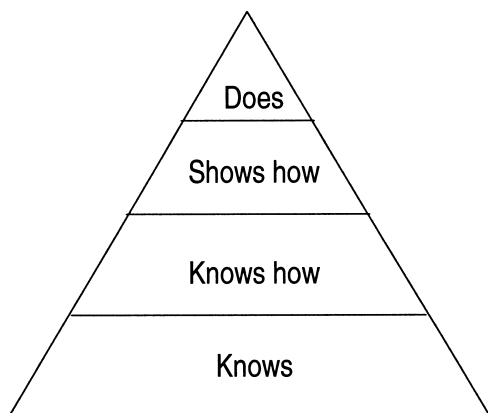
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FIGURE 1   Miller's pyramid of competence.

to ensuring the best use of medicines (Department of Health, 2000). Knowledge has traditionally been the key component of undergraduate courses but the reliance on this factual information frequently creates a misinterpretation among students of the requirements for *skills* associated with professional practice (Devenport, 1990). This is often exacerbated by a lack of structure within clinical practice and an absence of nationally (or internationally) agreed standards of practice. As a consequence, junior pharmacists express poor job satisfaction citing paucity of direction, assessment and feedback as factors in their dissatisfaction (Rajah *et al.*, 2001). This paper describes the process of identifying competencies for junior pharmacists in clinical practice (those pharmacists who have often only recently registered) and describes a tool to assess those competencies in relation to the basic clinical activities expected of junior grade pharmacists in hospital practice.

PILOT WORK

Clinical pharmacy managers in the South and North Thames, and subsequently London, Region meet on a regular basis to discuss current issues. It became clear that there were problems with the diversity of the tasks performed by junior grade pharmacists. As a starting point in these discussions, an initial "grid system" was developed to describe the constituent tasks that could be expected to be achieved by different grades of staff (Table I). However, despite extensive debate, no consensus could be reached on which grade of staff would be most appropriate to undertake each specific role. It became obvious that there was considerable variation in the expectations of competence and performance of junior pharmacists, and that a different approach would be needed.

Others have illustrated the process of developing a competence framework. Whiddett and Hollyforde (1999) describe a typical competence framework structure consisting of competency clusters, competencies and behaviours (Fig. 2) This approach was considered appropriate for developing a competency framework for pharmacists in clinical practice.

DESIGN

A steering group of clinical pharmacists, academics and clinical pharmacy managers were tasked with the development of a competency framework suitable for pharmacists in their first
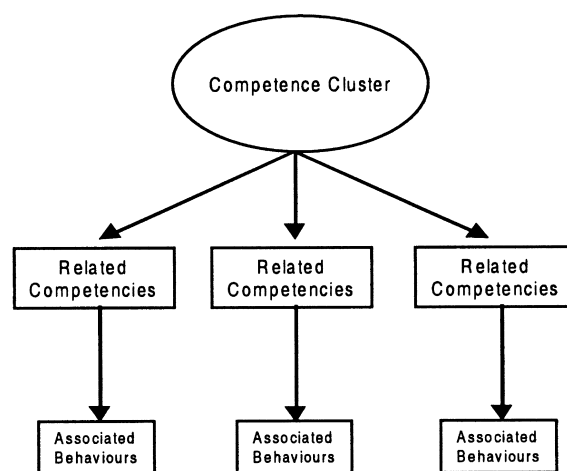

FIGURE 2   Development of competencies.

ASSESSMENT OF CLINICAL COMPETENCIES

TABLE I Functions of a clinical pharmacist

	Junior (Grades A and B)	Junior (Grade C)	Senior (non-specialist)	Specialist (Grades D and E)
Interview patients to obtain and document in the medical record information pertinent to dosage determinations and medication history				
Initiate requests for and perform, appropriate laboratory and other diagnostic studies needed to monitor drug therapy				
Renew or rewrite prescriptions for continuation of drug therapy in accordance with established therapeutic endpoints or patient's appointment status				
Evaluate patients response to drug therapy				
Perform, record and interpret patient's pertinent physical findings relevant to monitoring drug therapy				
Provide oral or written recommendations for corrective actions for drug related problems				
Initiate, continue, modify and monitor medication therapy in response to drug related problem or cost-effectiveness				
Implement treatment guideline, protocols, formulary changes or patient care maps as approved by D & T				
Provide and document in the medical record patient education, expected patient outcomes of therapy, monitoring parameters, and follow up plans for drug therapy				
Provide direct patient care for appropriate disease management, either under protocol or independently				
Provide specialised in service education to other health care professionals				
Design, conduct, and co-ordinate clinical research				
Develop drug use evaluation criteria and other quality assurance measures to assess the appropriate use of drug therapy				

3 years of practice. The group undertook a job analysis of the clinical role of junior pharmacists and reviewed the literature relating to assessment of clinical practice. The framework was adapted and levels of achievement within each behaviour or task described, before the framework, or "grid" as it became known, was circulated for further comment and consensus. Following review by the design group, the pilot competency assessment grids were produced.

OUTPUTS

Competency clusters were identified for three key areas; problems solving, personal and clinical skills (Table II). Competencies that a junior pharmacist should be expected to possess were described for each cluster.

The behaviours assigned to the problem solving grid (Table III) are problem solving abilities. Those assigned to personal competencies grid (Table IV) were based upon professional attributes defined in Royal Pharmaceutical Society of Great Britain (2001) code of conduct. The behaviours assigned to the clinical skills grid (Table V) were designed to reflect the drug use process (for example, Hutchinson *et al.*, 1986). Performance levels for each behaviour were related to the frequency of their demonstration.

DISCUSSION

The problem solving and personal grids identify behaviours that are relevant for pharmacists in any sector of practice. In general, use of these grids will encourage junior pharmacists to recognise the attributes that are required to undertake their professional duties. The grids can therefore be incorporated into competency measures for other sections of practice and indeed other disciplines.

The clinical skills grid provides a description of the behaviours that should be observed when undertaking clinical assessments of junior pharmacists. Assessment of the junior pharmacist using this methodology should provide them with an indication of the areas where they have demonstrated competence and the areas where further development is required.

The competencies were identified by consensus method and should be relevant to all areas of clinical practice. The expected levels of performance associated with these competencies—that is whether the individual is expected to achieve the specific competency "always", "mostly", "sometimes" or "never"—will depend on local priorities and resources. It is anticipated that different competencies may be necessary for pharmacists practising as clinical specialists and these are under discussion. The validity, reliability and sensitivity of the grids as an assessment tool are currently being evaluated, but pilot results are encouraging (Goldsmith, 2001).

CONCLUSION

This paper presents a set of competency grids for the assessment of junior pharmacists that may be used to identify areas of satisfactory and inadequate performance. Using this evidence-led approach, training needs can be identified and action plans developed to improve performance; hence contributing to the implementation of clinical governance within pharmaceutical care.

TABLE II Competency clusters in the assessment grid

Competency cluster	Competencies	Behaviours	Examples
Personal competencies	Organisation	Works in an organised fashion. Shows initiative	Punctuality, efficiency and the ability to prioritise work
	Communication	Communication is clear, precise and appropriate. Selects most effective method of communication	Patient education, influencing, negotiation, feedback
	Professionalism	Adheres to legislation and local policy and takes responsibility for CPD	Courtesy, confidentiality, recognition of limitations, documentation
	Team working	Works effectively as part of a team. Understands and respects colleagues abilities	Referral, educating other health care professionals
Problem managing	Gathering information	The ability to access and abstract data from relevant sources	Drug history, Computer record interrogation. Medical record interrogation
	Knowledge	Maintains clinical and pharmaceutical knowledge which underpins the rational use of medicines	Pharmacology, side effects, pathophysiology, guidelines protocols and formularies
	Analysing information	Evaluation and synthesis of information and knowledge relevant to drug therapy	Compliance issues, formulation difficulties, side effects
	Applying information	Provides accurate, relevant and timely information and advice	Recommending drug therapy, audit
Delivery of patient care	System of working	Follows process of work and accepts responsibility for their contribution to patient care	Problem identification, option appraisal, recommendation, drug use process, documentation
	Consultation	Reflects personal limitations and ability to refer to pharmacy or other professional colleagues. Consults with patients and care deliverers with regard to drug therapy	Accept responsibility, recognise limitation, seek advice, follow up request, appropriate documentation

TABLE III   Problem solving competencies grid

				Comments
Gathering information				
Accesses information	*Always* able to access information from appropriate sources	*Usually* able to access information from appropriate sources	*Sometimes* able to access information from appropriate sources	Failure to access information from appropriate information sources resulted in harm
Abstracts information	*Always* able to abstract key points from information gathered	*Usually* able to abstract key points from information gathered	The basic grade is *Sometimes* able to abstract key points from information gathered	Failure to access key points from information gathered resulted in harm
Knowledge				
Logic	*Always* demonstrates a logical thought process to problems solving	*Sometimes* demonstrates a logical thought process to problems solving	Does not demonstrate a logical thought process to problems solving	Lack of logical thought processes resulted in patient harm
Pathophysiolgy	Knowledge of pathophysiology is *excellent*	Knowledge of pathophysiology is *good*	Knowledge of pathophysiology is *reasonable*	Knowledge of pathophysiology is *poor*
Pharmacology	*Always* able to discuss how drugs work	*Sometimes* able to discuss how drugs work	*Seldom* able to discuss how drugs work	*Never* able to discuss how drugs work
Side effects	*Always* able to describe the major side effects of drugs	*Sometimes* able to describe the major side effects of drugs	*Seldom* able to describe the major side effects of drugs	*Never* able to describe the major side effects of drugs
Analysing information				
Evaluates information	Is *always* able to evaluate information gathered	Is *usually* able to evaluate information gathered	Is *sometimes* able to evaluate information gathered	Failure to evaluate information gathered in harm
Appraises options	*Always* appraises options	*Usually* appraises options	*Sometimes* appraises options	Options are *never* appraised
Decision making	*Always* demonstrates clear decision making	*Usually* demonstrates clear decision making	*Sometimes* demonstrates clear decision making	Failure to make clear decisions resulted in harm
Providing information				
Provides accurate information	*Always* provides accurate information	*Usually* provides accurate information	*Sometimes* provides accurate information	Failure to provide accurate information resulted in harm
Provides relevant information	*Always* provides relevant information	*Usually* provides relevant information	*Sometimes* provides relevant information	Failure to provide relevant information resulted in harm
Provides timely information	*Always* provides timely information	*Usually* provides timely information	*Sometimes* provides timely information	Failure to provide timely information resulted in harm
Follow up				
Ensures resolution of problem	*Always* ensures resolution of problem	*Usually* ensures resolution of problem	*Sometimes* ensures resolution of problem	Failure to ensure resolution of problem results in harm

TABLE IV   Personal competencies grid

				Comments
Organisation				
Prioritisation	*Always* prioritises work well	*Usually* prioritises work well	Does not prioritise work well	Poor prioritisation results in work not being completed
Punctuality	*Always* punctual	*Usually* punctual	*Seldom* punctual	*Never* punctual
Initiative	*Always* demonstrates appropriate initiative when required	*Usually* demonstrates appropriate initiative when required	Does not demonstrate initiative	Demonstrates *inappropriate* action
Efficiency	*Always* uses time on the ward efficiently	*Usually* uses time on the ward efficiently	Inefficient use of time sometimes results in tasks not being completed	Inefficient use of time *often* results in tasks not being completed
Communication				
With nursing staff	Communication is clear, precise, and appropriate	Communication is *usually* clear, precise, and appropriate	Communication is usually clear, precise, but *not* appropriate	Communication is unclear and inappropriate
With medical staff	Communication is clear, precise, and appropriate	Communication is *usually* clear, precise, and appropriate	Communication is usually clear, precise, but *not* appropriate	Communication is unclear and inappropriate
With mentor/tutor	Communication is clear, precise, and appropriate	Communication is *usually* clear, precise, and appropriate	Communication is usually clear, precise, but *not* appropriate	Communication is unclear and inappropriate
With other pharmacy staff	Relevant information is *always* passed on	Relevant information is *usually* passed on	Failure to pass on relevant information *sometimes* resulted in extra effort by others	Failure to pass on relevant information *often* resulted in extra effort by others
Team work				
Pharmacy team	*Always* recognises value of other team members *Always* works effectively as part of a team	*Usually* recognises value of other team members *Usually* works effectively as part of a team	Unaware of value of other team members Ineffective member of team	Does not value other team members Disruptive in team
Multidisciplinary teams	*Always* recognises value of other team members *Always* works effectively as part of a team	*Usually* recognises value of other team members *Usually* works effectively as part of a team	Unaware of value of other team members Ineffective member of team	Does not value other team members Disruptive in team
Professionalism				
Confidentiality	*Always* maintains confidentiality	*Always* maintains confidentiality	*Always* maintains confidentiality	Does not *always* maintain confidentiality
Recognition of limitation	*Always* recognises limitations	*Usually* recognises limitations	*Seldom* recognises limitations	Inability to recognise limitations results in patient harm
Responsibility for own action	*Always* takes responsibility for own action	*Usually* takes responsibility for own action	Fails to accept responsibility for own action	Fails to recognise personal responsibility
Responsibility for patient care	*Always* takes responsibility for patient care	*Usually* takes responsibility for patient care	Fails to accept responsibility for patient care	Fails to recognise responsibility for patient care

TABLE V   Clinical competencies grid

				Comments
Need for the drug				
Relevant patient background	Retrieval of *all* relevant information from medical and nursing and electronic records	Retrieval of *most* relevant information from medical and nursing and electronic records	Retrieval of *some* relevant information from medical and nursing and electronic records	Failure to retrieve relevant information results in errors
Drug history	*Always* documents an accurate and comprehensive drug history	*Mostly* documents an accurate and comprehensive drug history	*Sometimes* documents an accurate and comprehensive drug history	Failure to document drug history results in error/harm
Selection of drug				
Drug–drug interactions	Drug–drug interactions are *always* identified	Drug–drug interactions are *usually* identified	Drug–drug interactions are *sometimes* identified	Failure to identify drug–drug interactions resulted in harm
	Drug–drug interactions are *always* appropriately prioritised	Drug–drug interactions are *usually* appropriately prioritised	Drug–drug interactions are *sometimes* appropriately prioritised	Failure to prioritise drug–drug interactions resulted in harm
	Appropriate action is *always* taken	Appropriate action is *usually* taken	Appropriate action is *sometimes* taken	Failure to take appropriate action resulted in harm
Drug–patient interactions	Drug–patient interactions are *always* identified	Drug–patient interactions are *usually* identified	Drug–patient interactions are *sometimes* identified	Failure to identify drug–patient interactions resulted in harm
	Drug–patient interactions are *always* appropriately prioritised	Drug–patient interactions are *usually* appropriately prioritised	Drug–patient interactions are *sometimes* appropriately prioritised	Failure to prioritise drug–patient interactions resulted in harm
	Appropriate action is *always* taken	Appropriate action is *usually* taken	Appropriate action is *sometimes* taken	Failure to take appropriate action resulted in harm
Drug–disease interactions	Drug–disease interactions are *always* identified	Drug–disease interactions are *usually* identified	Drug–disease interactions are *sometimes* identified	Failure to identify drug–disease interactions resulted in harm
	Drug–disease interactions are *always* appropriately prioritised	Drug–disease interactions are *usually* appropriately prioritised	Drug–disease interactions are *sometimes* appropriately prioritised	Failure to prioritise drug–disease interactions resulted in harm
	Appropriate action is *always* taken	Appropriate action is *usually* taken	Appropriate action is *sometimes* taken	Failure to take appropriate action resulted in harm
Administration of drug				
Calculation of appropriate dose	Appropriate dose is *always* ensured	Appropriate dose is *usually* ensured	Appropriate dose is *sometimes* ensured	Failure to ensure appropriate dose resulted in harm
Selection of dosing regimen (route and time)	Appropriate regimen is *always* ensured	Appropriate regimen is *usually* ensured	Appropriate regimen is *sometimes* ensured	Failure to ensure appropriate regimen resulted in harm
Selection of formulation and concentration	Appropriate formulation and concentration are *always* ensured	Appropriate formulation and concentration are *usually* ensured	Appropriate formulation and concentration are *sometimes* ensured	Failure to ensure appropriate formulation and concentration resulted in harm
Provision of drug product				

Table V – *continued*

				Comments
The prescription is unambiguous	Clarity of prescription is *always* ensured	Clarity of prescription is *usually* ensured	Clarity of prescription is *sometimes* ensured	Failure to ensure clarity resulted in harm
The prescription is legal	Legality of prescription is *always* ensured	Legality of prescription is *usually* ensured	Legality of prescription is *sometimes* ensured	Failure to legality resulted in harm
Monitoring drug therapy				
Identification of pharmaceutical problems	Pharmaceutical problems are *always* identified	Pharmaceutical problems are *usually* identified	Pharmaceutical problems are *sometimes* identified	Failure to identify pharmaceutical problems resulted in harm
Prioritisation of pharmaceutical problems	Pharmaceutical problems are *always* accurately prioritised	Pharmaceutical problems are *usually* accurately prioritised	Pharmaceutical problems are *sometimes* accurately prioritised	Failure to accurately prioritise pharmaceutical problems resulted in harm
Use of guidelines	Recent clinical guidelines are *always* accurately applied	Recent clinical guidelines are *usually* accurately applied	Recent clinical guidelines are *usually* accurately applied	Failure to apply recent clinical guidelines results in harm
Resolution of pharmaceutical problems	Appropriate pharmaceutical problems are *always* appropriately resolved	Appropriate pharmaceutical problems are *usually* appropriately resolved	Appropriate pharmaceutical problems are *sometimes* appropriately resolved	Failure to appropriately resolve pharmaceutical problems resulted in harm
Consultation or referral	Appropriate pharmaceutical problems are *always* appropriately referred	Appropriate pharmaceutical problems are *usually* appropriately referred	Appropriate pharmaceutical problems are *sometimes* appropriately referred	Failure to appropriately refer pharmaceutical problems resulted in harm
Drug information and patient education				
Need for information is identified	Patients need for information is *always* accurately identified	Patients need for information is *usually* accurately identified	Patients need for information is *sometimes* accurately identified	Failure to identify the patients need for information resulted in inappropriate therapy
Accurate and reliable drug information is communicated	Accurate and reliable drug information is *always* communicated	Accurate and reliable drug information is *usually* communicated	Accurate and reliable drug information is *sometimes* communicated	Failure to communicate accurate and reliable information resulted in harm
Documentation	Appropriate information is *always* documented	Appropriate information is *usually* documented	Appropriate information is *sometimes* documented	Failure to document appropriate information results in harm
Evaluation of outcomes				
Assessing outcomes of contributions	Outcomes of contributions are *always* appropriately assess	Outcomes of contributions are *usually* appropriately assess	Outcomes of contributions are *sometimes* appropriately assess	Failure to appropriately assess outcomes of contributions results in harm

References

Department of Health (2000) Pharmacy in the Future—Implementing the NHS Plan: A Programme for Pharmacy in the National Health Service (DoH, London).

Department of Health, www.doh.gov.uk/pricare/clingov.htm (accessed 23rd July 2001).

Devenport, J.K. (1990) "Competency based curriculum for pharmacy practice", *J. Pharm. Practice* **3**(2), 80–84.

Goldsmith, G. (2001) "An Investigation of the Effect of a Competency Based Training Programme has on Junior Pharmacists' Satisfaction and Fitness for Purpose" MSc ThesisUniversity of Brighton (UK).

Hutchinson, R.A., Vogel, D.P. and Witte, K.W. (1986) "A model for impatient clinical pharmacy practice and reimbursement", *Drug Intell. Clin. Pharm.* **20**, 989–992.

Miller, G.E. (1990) "The assessment of clinical skills/performance", *Acad. Med.* **65**, 563–567.

Rajah, T., Bates, I., Davies, J.G., Webb, D.G. and Fleming, G. (2001) "An occupational survey of hospital pharmacists in the south of England", *Pharm. J.* **266**, 723–726.

Rethans, J.J., Sturmans, F., Drop, R., van der Vleuten, C. and Hobus, P. (1991) "Does competence of general practitioners predict their performance? Comparison between examination setting and actual practice", *Br. Med. J.* **303**, 1377–1380.

Royal Pharmaceutical Society of Great Britain (2001) Code of Ethics (Pharmaceutical Press, London).

Wass, V., van der Vleuten, C., Shatzer, J. and Jones, R. (2001) "Assessment of clinical competence", *Lancet* **357**, 945–949.

Whiddett, S. and Hollyforde, S. (1999) The Competence Handbook (Institute of Personnel and Development.