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Journal club for faculty or residents: A model for lifelong learning and maintenance of certification

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Abstract

The journal club offers a model for lifelong learning and maintenance of certification (MOC) for residents and faculty staff. First, it sharpens participants' critical appraisal skills by providing a space to discuss relevant medical literature. Second, it motivates participants to seek new medical literature on their own using technology.

Our model sets forth a four-year journal club curriculum that could be used as one continuous curriculum or in bits and pieces. In the first year, the focus is teaching residents how to read an article. The second year focuses on what is of interests to the reader. The third year applies the resident's appraisal skills to assigned articles to test whether they can determine which have reliable and valid findings and which are flawed. In the fourth year residents are asked to distinguish whether articles are well researched and referenced.

Our model also motivates participants to read articles in faculty journal clubs throughout their career. In most academic settings category 1 continuing medical education (CME) credits can be awarded so journal club can have the added benefit of satisfying maintenance of certification CME credits. From journal club both residents and faculty can learn what is new and learn to apply this new information in their practice.

Finally, because technology creates an overabundance of relevant medical literature, participants using our model can develop strong critical appraisal skills and methods for organizing the information they find that make this information readily available for future use and retrieval.

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Introduction

The concept of lifelong learning, while always an important part of staying competent, has gained additional importance in the context of the mandatory requirements for maintenance of certification (MOC) every 10 years. One of the 10-year requirements for MOC in psychiatry is the inclusion of 300 hours of category 1 continuing medical education (CME). CME credits have become a barometer of competency used as a marker to demonstrate proficiency and lifelong learning.

From a practical perspective, clinicians need to stay abreast of the constantly changing field of medicine. And now, as the field of informatics is evolving ever more rapidly, the struggle for faculty staff and residents alike is to figure out how to acquire new information efficiently and how to apply it productively, all while earning the important CME credits for MOC (Havens & Mallin, 2011). It has become increasingly important to help Post Graduate Year (PGY) residents to learn, right from the beginning of their training, the skills needed for ongoing knowledge acquisition and lifelong learning.

As a crucial component of remaining current, the ability to understand data-driven research and journal content has become an absolute necessity. The development of a systemized approach to critical appraisal of the literature can quickly allow the integration of new information into clinical practice and optimization of patient care (Havens & Mallin, 2011). With that in mind, we will look at the journal club as an ideal model in which to teach the skills needed for lifelong learning in residency training and beyond.

Teaching trainees to critically appraise the literature in every year of their training

The journal club in residency training is steeped in tradition and is historically found in most residency training programmes. It provides an opportunity for colleagues to openly discuss new and clinically

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relevant articles. However, its utility far exceeds the collegiality that develops amongst participants. Journal club, when appropriately approached as a group process, not only aids in expanding knowledge for participants, but also serves as a vehicle to develop critical appraisal skills. Faculty members, many of whom act as discussants for residents' journal clubs, can also have their own separate journal clubs, without residents, so that they can talk freely about what they do not know or do not understand.

Most residency review committees and/or graduate medical education committees require their programmes to meet a standard in which inquiry and scholarship take place (ACGME, 2008). We propose that learning to critically appraise the published literature is one of the first steps in promoting scholarship. We look at the journal club curriculum used in our residency training programme longitudinally across all four years of training, as one model for the development of self-promoted learning. While the 'standard' for residency training is simply 'competence', the expectation in all programmes should be 'excellence', and journal club can help residents reach this goal.

It is important to understand the limitations of a traditional journal club. Some journal clubs may have participants who have inconsistent critical appraisal skills, or lack knowledge about the article topic, or feel intimidated about providing a critique. These factors can limit or prevent optimization of learning. Participants may also have little knowledge of statistics and get lost in the details of a study with a resultant loss in the utility of discussion. In its most unproductive form, journal club participants may not find the article 'interesting' or 'clinically relevant' and thus not read it or participate in the discussion at all.

With these limitations in mind, we model a four-year journal club curriculum in our general psychiatry programme that grows in its requirements and expectations over time. The four-year curriculum aims at allowing residents to understand the fundamentals of hypothesis formulation and literature searching, so that they can find and critique the studies most relevant to their medical decision making. In outlining these four journal club curricula, as well as journal club for faculty members we offer options of how to make journal club part of lifelong learning and MOC.

PGY-1: Introduction – how to read an article: 'Fill In the Blanks'

Through discussion of article organization, study design, and methodology used in research, residents gain invaluable information in how to read an article and extract the important elements (Mohr et al., 2012). Essential to this process is an understanding of study type and basic statistics. While the exacting process of analysing the studies can be tedious for some participants, we find that working collaboratively in a group helps develop the sense of camaraderie that is central to journal club and lessens the tedium.

Our residents initially utilize a worksheet to understand the key components of critical appraisal of an article in the first year (Fig. 1). This form uses a 'fill in the blanks' type approach to understanding the important components of any selected article. This creates a framework and methodology to use for future readings. The PGY-1 journal club is also a good place to incorporate 'modern' teaching techniques such as 'cold calling' which ensure participation of all residents rather than just those who are enthusiastic (Lemov, 2010). In cold calling the discussion leader randomly picks students to answer questions regarding the material, always being careful to do so in a supportive manner. The concept behind supportive cold calling is that it promotes 'engaged participation' and that there is never just one right answer and in fact often there are multiple answers to any question that the discussion leader may raise to get the discussion going. The students rapidly become familiar with the process and take responsibility for reading the article and paying attention to the discussion. When this technique is used correctly, the spirit of collaboration and education will win out over the nervousness about giving the 'wrong' answer or not understanding what is read.

PGY-2: Journal club - 'you pick it: it is easier to read what you are interested in'

As residents progress through the curriculum, the focus of the second year of training becomes identifying articles that fulfil a desire to learn what is relevant to each of them as clinicians. We model a programme that aids residents in self-driven inquiry by letting them decide what articles will be read each week. In residency training we understand that, clinicians and residents are most likely to participate in areas of specific interest to them. They are willing to spend time on information that will enrich their perspective and knowledge base. Thus, within the model presented to our residents in year two we focus on five crucial steps in choosing any article that may warrant further investigation/reading. These simple steps help a learner decide how to best use precious time and energy.

1. *Read the title:* While looking at the title of an article we ask residents to note 'Does the title intrigue you or grab your attention?' In article review we understand the title is the gateway into

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Journal Club Critical Review Form
(Adapted by Pato from Brooke Lerner, 1999, version1.1)

Name: _____

Journal club date: _____ 1st Author, Title, Pub date _____

Introduction
Hypothesis: _____
Are objectives clearly stated? ☐ No ☐ Yes

Methods
Study design: ☐ Correlational ☐ Case report ☐ Case series ☐ Cross-section
☐ Cohort ☐ Case control ☐ Experimental ☐ Meta-analysis
☐ RCT ☐ Review – If yes, were selection criteria specified? Yes/No ☐ Other_____

Time frame: ☐ Prospective ☐ Retrospective ☐ Not applicable
Randomized: ☐ Random ☐ Nonrandom ☐ Not applicable
Blinded: ☐ Unblinded ☐ Single Blinded ☐ Double blinded ☐ Not applicable
Enrolment: ☐ Convenience ☐ Consecutive ☐ Other _____

Subject source (population): _____
Inclusion criteria: _____
Exclusion criteria: _____
How are controls different from cases? _____ ☐ Not applicable
Descriptive variables: _____
_____
Outcome variables: _____
_____

Main dependent variable: _____ ☐ Parametric ☐ Non-parametric
Main independent variable:_____ ☐ Parametric ☐ Non-parametric

Statistical test (check all that apply): ☐ T-test ☐ ANOVA ☐ Kruskal-Wallis ☐ Mann Whitney ☐ Chi2 ☐ Fishers Exact ☐ Logistic Reg. ☐ Linear Reg. ☐ Survival analysis ☐ Other_____ ☐ Not applicable ☐ Correlations

Is there a power calculation? ☐ No ☐ Yes Alpha: _____ Beta: _____
Smallest detectable difference: _____

Results
Is there a difference between groups: ☐ No ☐ Yes ☐ Not applicable
Magnitude of the difference between groups? _____ 95%CI_____ P value_____
List any other relevant findings: _____
_____
Percentage of subjects lost to follow-up or non-response: _____%
Are participants different from non-participants? ☐ No ☐ Yes
If they are different: How are they different? _____

Discussion
Was there bias in the study? ☐ No ☐ Yes Where: _____
Who can the results be generalized to? _____

Conclusion
Did the results support the hypothesis? ☐ No ☐ Yes
Will you change your practice from this study? ☐ No ☐ Yes How: _____

Fig. 1. Critical appraisal form for journal club adapted by M.T. Pato from E. Brooke Lerner, 1999, version 1.1.

the content within the article and further inquiry. There may be no sense in continuing with a review of an article if it is not interesting, as this is a well-known limitation of self-driven study. We do understand that occasionally the title might not aptly describe the content of a given article, but it is a way to narrow one's focus and ensure appropriate use of limited time given the volumes of literature available.

2. *Look at the authors:* With interest in an article evoked by the title, a subsequent look into the authors of the piece may give a glimpse into the content to come. By knowing that the individuals who are presenting the information have the appropriate level of expertise, an independent learner can have some assurance that the time spent is not going to be of low yield or minimal utility. Identifying experts in the field of interest can add a level of security in knowing the information has utility.
3. *Look at the references:* Once an article appears to be of interest and from reputable authors,

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we encourage our trainees next to look at the sources utilized by the authors to ensure that the information as discussed is based on appropriate reference sources, especially peer-reviewed journals. In addition, a perusal of the references might yield an article of even more interest and of potentially higher yield. The reader also needs to note that the references are comprehensive and not biased by a predominance of the author's views only.

4. *Read the abstract:* Once an article has met the minimum requirement of being not only interesting to the reader and from a reputable source, a brief read of the abstract will ensure the amount of time spent in further reading of the article will likely yield dividends.
5. *Look at the 'pictures':* In briefly skimming an article, looking at the tables, graphs, and figures, a reader can add another assurance that the time spent will not be of low yield.

These five steps usually take no longer than the time it just took you to read them (two to three minutes), so they permit an efficient use of the clinician's time to gain new knowledge.

PGY-3: Assigning research articles – 'now that you have interest in reading let us guide your learning a little more directly'

As residents continue to progress through the curriculum they soon become adept at identifying areas of interest, but more importantly become more confident in their critical appraisal skills, which aids in further self-guided discovery. So the next step in our curriculum aims at demonstrating to our residents that not all that is published provides reliable or valid information. By selecting an array of articles, some of which significantly fall short of previously defined 'quality' standards, for residents to read and critique, we offer residents the opportunity practice their skills as a critical appraiser. The utilization of 'principles learned' fosters a sense of empowerment in tackling tough topics and also helps trainees reinforce the importance of reading articles in areas of weakness and well as strength. These goals are achieved by assigning articles as part of a 12-week research course – 'Basic research seminar' – structured around teaching how to 'do' research, both clinical and basic science (Pato & Pato, 2001), This opens the door to residents to not be afraid to read in new areas that might not be familiar to them. This can include a wide array of articles, not just randomized controlled trials (RCT), but meta-analyses and review papers. For some they discover new interests and for others it just fills in gaps in their basic knowledge needs.

PGY-4: 'What to read and what to throw away'

With the foundations of critical appraisal laid, a sense of empowerment solidifies the final year of training and helps the learner decide how to filter all the information that comes to their 'mailboxes', whether through snail mail or e-mail. Just because something is free or unsolicited does not mean that you should throw it away or that you should read it. But how do you get through all the paper and e-mails quickly to what is worth reading? Once again we turn to the five steps we taught in year two:

1. Read the title.
2. Look at the authors.
3. Look at the references.
4. Read the abstract or the first and last paragraph.
5. Look at the pictures.

Many mail deliveries will be more like newspaper stories, short and sweet. Yet it is still a lot to read and time is limited to 24 hours a day. Many of these articles will appear with minimal peer review so it can be even more important to use the review of references (item 3 above). In this fourth year course the residents are asked to pull an article out of the reference section and read it, checking to see if the opinion in the reference is accurately reflected in the manuscript written. If it is not, can any of what the authors have referenced for their manuscript be believed? Maybe not, so it might not be worth the time to read.

Faculty: 'What do you do for faculty members to maintain CME credits for MOC?'

Faculty members face the same challenges as medical students and residents: too much information, too little time. The most important difference between faculty and trainees is that their level of responsibility is significantly greater since they are treating patients directly and are also training the next generation of psychiatrists. Each physician has to carve out the time for lifelong learning, making it as much a habit as completing medical charts in a timely manner. There are always new things to learn, and, like world-class violinists, we must practice our skills in order to maintain them (Davis et al., 2010). By combining new knowledge with lifelong clinical experience, and by modelling the practice of lifelong learning, faculty members can provide state-of-the-art training to their trainees (Cole & Glass, 2004).

Journal clubs for faculty members: an ideal forum for learning what is new and for figuring out how this information can enhance patient care

The journal club may be orientated to a specialist topic or it could be a general interest club. The person

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who is interested in starting a journal club identifies two or three other faculty members who want to participate, and together they set a time to meet. The leader's next task is to pick a core group of articles, assign them, and then coordinate the discussion. As the journal club develops, similar to the progression in the residents' journal club curriculum, members will take more responsibility for each phase of the process. Establishing the journal club's didactic approach ahead of time guarantees the best results. We recommend using the approach of engaged and active participation in which each member of the club will be encouraged to discuss the article after the formal presentation (Lemov, 2010). The leader starts by explaining that everyone has something to contribute even if they have not read the article. To get a discussion started, the leader might explain why he or she chose the article, and what seemed interesting or controversial about it. Another approach is for the leader to pose questions to the group members, in sequence, stressing that if someone does not know the answer the question will simply go to the next person. While some people might feel a little hesitant to reveal that they do not know an answer, they will quickly become comfortable with the format when they see that it is not used to embarrass them but rather to encourage them to contribute (which they can usually do based on common sense and clinical experience). This approach minimizes the chance that one or two individuals will dominate the discussion and it will enhance the experience for everyone present. It is important to stress that this is about dialogue, not about keeping score, so each person simply has to make an effort to participate to have a successful journal club.

As the participants get comfortable with the routine, they will become adept at article analysis. Eventually, the participants will start to choose articles to present. The club leader is responsible for making sure there are one or two articles each time, and for circulating copies of the article. The journal club may be limited to faculty, if so desired, or may include trainees from the beginning. It is up to the leader to adjust the questions and objectives according to the level of expertise. Usually, each person ends up finding out that they knew more than they realized and develops a sense of pride in their ability to analyse new material and integrate new concepts. Getting the journal club started is the hardest part – maintaining it is relatively easy once a consistent place and time are established.

How can technology help? How to avoid information overload

Lifelong learning and MOC are essential to maintaining competency and managing the vast amount of information being produced to support clinical care. Developing a strong foundation in critical appraisal skills from the journal club will make managing the information explosion a more productive task. PubMed adds over 500,000 new citations to its database every year – that is over 1,300 articles every single day. In addition, there are other academic databases, biomedical journals, and professional associations providing access to studies, guidelines, editorials, and content. There is also the public Internet, which, according to Netcraft, a UK research company, now includes over 612 million websites (Netcraft, 2012).

While not all of this information will be relevant or even useful to your practice, faculty members and residents should learn to use the tools of the Internet to manage the flow of information. Glasziou defines two processes for dealing with information overload: 'pull' which is seeking information to answer specific clinical questions, and 'push' which is receiving potentially useful information without asking for it (Glasziou, 2008). A third process to consider is maintaining information. This is managing the results of this pull–push process so that the information can be easily re-used and shared.

Pulling information

Evidence-based practice provides a framework for efficiently pulling information to answer specific clinical questions about specific patient problems (the three As: ask, acquire and appraise):

1. *Ask:* Asking well-focused questions that include the 'PICOT' (patient Problem, Intervention, Comparison, patient-centred Outcomes and appropriate study designs based on the Type of question that is being asked). (PICOT is a variation of the PICO framework for the essential parts of the well-built clinical question developed by Richardson et al., 1995) Instead of asking for 'current treatment for PTSD' one might focus the question to 'In veterans with PTSD, does risperidone reduce the incidence of psychotic symptoms or episodes?'
2. *Acquire:* Knowing the advantages of evidence based medicine (EBM) resources, which identify relevant and valid studies (e.g. *ACP Journal Club*, *Cochrane Systematic Reviews*, or *Evidence-Based Mental Health*) and understanding the basic search strategies for efficiently finding relevant articles in PubMed:
    - Focusing the question
    - Checking details to see how PubMed translated your terms
    - Making sure that the search terms include appropriate medical subject headings (MeSH)

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- Combining terms appropriately: 'AND' makes all terms appear in each article found; 'OR' makes at least one of the terms appear in each article found.
- Filtering the topic at the end for study design, language and age groups, if appropriate (see Fig. 2).

3. *Appraise:* Understanding the study methodology and being able to review the study for possible sources of bias in the way patients were selected and assigned to the interventions and in the way outcomes were assessed and reported.

Pushing information

'Pushing' information may be less focused and is a method for keeping current on topics of interest to your practice and profession. This often relies on broad search strategies that create e-mail alerts when new citations on a topic or a table-of-contents of new issues of biomedical journals are added to databases, such as PubMed. There are online services (e.g. My NCBI, Journal Watch or BMJ Evidence Updates) that create a user profile in order to customize the push of new studies or medical news based on your topic or speciality. There are also professional association and government web sites, blogs, and other health-related web sites that regularly update content. The updated content can be pushed into your e-mail or better yet pushed through an RSS (rich site summary) feed that creates a customizable webpage (e.g. Google Reader, Feed Reader, or FEEDDLER RSS for the iPad) where all the new content can be organized and viewed much like an online newspaper.

Case study: an example of how to manage the pushing of information

You are beginning to see more patients with symptoms of PTSD and want to keep current on new studies of treatment strategies for these patients, especially in the veteran population. In PubMed, conduct a focused search for '(post-traumatic stress disorder or PTSD) AND veterans' and limit it to appropriate article types, such as randomized controlled trials or systematic reviews. You can save this search as an e-mail alert through the My NCBI feature of PubMed. Your search will be stored and as the database is being updated daily, any new citations that match your search strategy will be e-mailed to you (see Fig. 3).

You can also use My NCBI in PubMed to push the tables of contents of your favourite journals. This can get overwhelming if you have a large number of journals to review. One solution is to combine a search of topics of interest with a search based on your favourite journal titles. For example:

Patient problem	PTSD, veteran
Intervention	(Risperidone OR atypical antipsychotic agents) and SSRI
Comparison	SSRI alone
Outcome	Reduce symptoms
Type of question/study	Therapy – randomized controlled trial

The search in PubMed considers the most important concepts of the PICOT:

4 Search **(1) AND no. 2** Filters: **Randomized Controlled Trial**	18
3 Search **(1) AND no. 2**	213
2 Search **risperidone OR antipsychotic agents**	118895
1 Search **(post traumatic stress disorder or PTSD)**	21231

The first article in the results is:Krystal JH, et al. Veterans Affairs Cooperative Study No. 504 Group. Adjunctive risperidone treatment for antidepressant-resistant symptoms of chronic military service-related PTSD: a randomized trial. *JAMA*. 2011 Aug 3; 306(5):493-502. PubMed PMID: 21813427.

Fig. 2. Pulling Information - A Case Study: an example of how to manage the pulling of information. The patient is a 37-year-old male veteran of the Iraq war. He has been diagnosed with PTSD and started on an SSRI, specifically fluoxetine. After 6 months, he does not seem to be improving and you want to consider adding an atypical agent such as risperidone to his treatment regimen. The temptation might be to run to PubMed and type in 'PTSD and treatment' or 'PTSD and SSRI'. Neither one of these strategies will be very helpful as they retrieve too many citations (10,097 citations for 'PTSD and treatment'; 396 citations for 'PTSD and SSRI') that are not specific to this patient. Using the PICOT framework will focus your question and set up a more targeted search strategy that pulls the right types of studies to address the clinical issue.

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('The American journal of psychiatry' [Journal] OR 'Journal of neurology, neurosurgery, and psychiatry'[Journal] OR 'The Journal of clinical psychiatry'[Journal] OR 'Archives of general psychiatry'[Journal] OR 'Comprehensive psychiatry'[Journal]) AND (post-traumatic stress disorder OR PTSD)

Maintaining information

Whether the information is pushed or pulled, it will need to be maintained so that those items that are useful can be tagged, stored, retrieved and shared. There are free web-based services (e.g. Zotero, Mendeley, Conotea) that allow you to collect, organize, cite and share citations to the journal literature, as well as web pages, images, and video files. This is especially helpful when collaborating on projects with colleagues in different departments or different institutions. These services offer the added benefit of automatically indexing the content of your library to enable you to quickly find the stored information. Because many of these products are web-based, the content can also be accessed whenever and wherever one might need them (see Fig. 3).

Case study: an example of a web-based tool for organizing research

You are doing research on a number of topics related to PTSD and veterans and treatment for depression. You conduct several PubMed searches and have identified websites with practice guidelines. As you work, Zotero sits at the bottom of your screen. Relevant citations can easily be added to a library. Zotero also allows you to: attach PDFs from your library collections; add notes to citations; sort by specific tags or headings; drag citations into bibliographies and share libraries with colleagues (see Fig. 3).

Final thought on keeping current: your librarian can be your friend

The information explosion has made an enormous amount of information easily accessible from computer workstations, tablets and smartphones. Interns, residents and faculty need to understand how to manage this information – how to pull out valid, reliable and accurate information to address specific patient problems, how to keep the push of information under control, and how to maintain the relevant information for future use and sharing. Working with your medical librarian is often a good first step in learning about the best resources and the best strategies for managing the flow of information.

Conclusion

Lifelong learning has become an essential component of MOC. Journal clubs throughout residency training, fellowships, and for faculty members offer a flexible educational environment that can be customized to the level of the learners. The curriculum

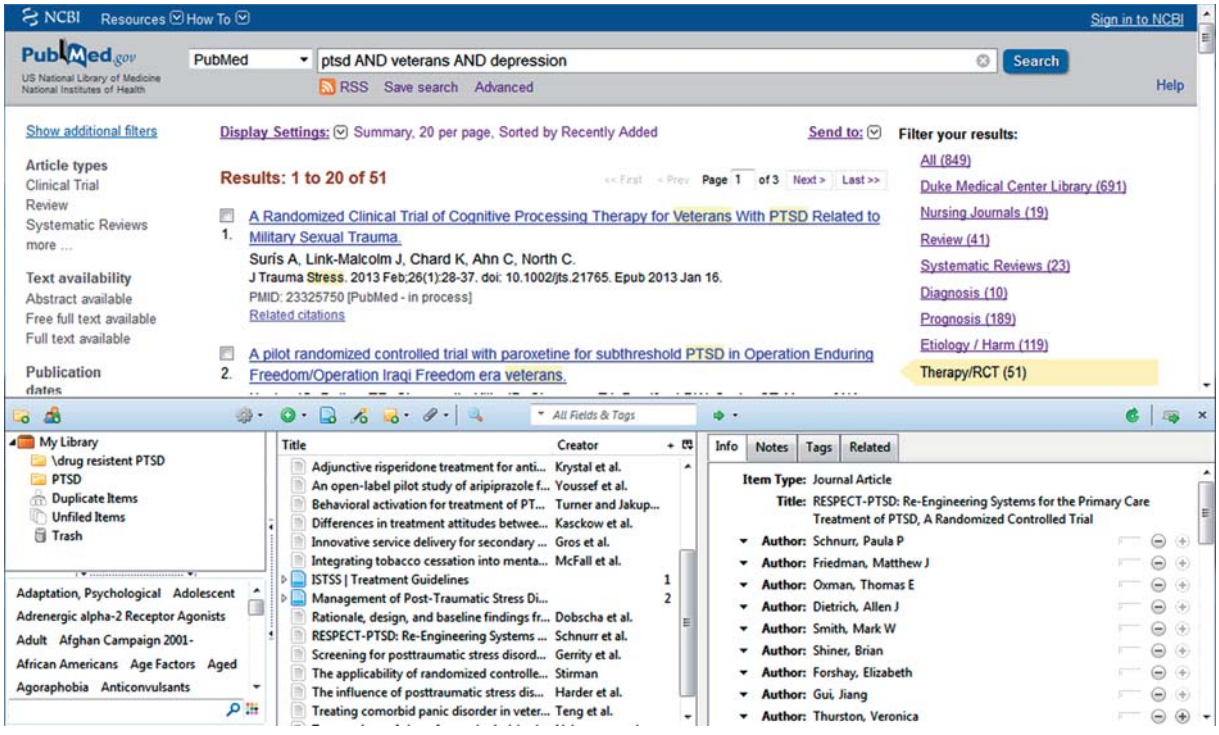

Fig. 3. Pushing and Maintaining Information.

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can be staged to provide a hierarchy of learning objectives that engage the learner in deciding what and how to learn.

Understanding how to manage the overabundance of information efficiently through pushing and pulling the data you want and then storing it on a customized web-based service can make it readily accessible when you need it again. Accessing the newest data, for the best care of your patients is always the goals but not everything is worth reading, nor do you have the time to do it. This paper hopefully offers some pointers on how to save time but continue learning. Peter Drucker summed this up nicely when he stated, 'We now accept the fact that learning is a lifelong process of keeping abreast of change. And the most pressing task is to teach people how to learn.' (2001).

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References

ACGME (Accreditation Council for Graduate Education). (2008). Program director guide to the common program requirements – IV.B. Retrieved from http://www.acgme.org/acgmeweb/tabid/237/GraduateMedicalEducation/InstitutionalReview/ProgramDirectorGuidetotheCommonProgramRequi.aspx

Cole, T.B. & Glass, R.M. (2004). Learning associated with participation in journal-based continuing medical education. *Journal of Continuing Education in the Health Professions, 24,* 205–212.

Davis, D.A., Baron, R.B., Grichnik, K., Topulos, G.P., Agus, Z.S. & Dorman, T. (2010). CME and its role in the academic medical center: Increasing integration, adding value. *Academic Medicine, 85,* 12–15.

Drucker Peter, F. (2001). The Essential Drucker. Butterworth Heinemann, Boston.

Glasziou, P.P. (2008). Information overload: What's behind it, what's beyond it? *Medical Journal of Australia, 189*, 84–85.

Havens, C. & Mallin, J. (2011). Climate change: It's not about the weather – Continuing medical education and maintenance of certification and licensure. *Permanent Journal, 15*, 88–92.

Lemov, D. (2010). *Teach Like a Champion: 49 Techniques that Put Students on the Path to College*. San Francisco, CA: Jossey-Bass.

Mohr, P., Höschl, C. & Volavka, J. (2012). Teaching critical appraisal of articles on psychopharmacology. *Academic Psychiatry, 36*, 114–117.

Netcraft. (2012). July 2012 Web Server Survey. Retrieved from http://news.netcraft.com/

Pato, M.T. & Pato, C.N. (2001). Teaching research basics to all residents: 10 years of experience. *Academic Psychiatry, 25*, 77–81.

Richardson, W.S., Wilson, M.C., Nishikawa, J. & Hayward, R.S. (1995). The well-built clinical question: A key to evidence-based decisions. *ACP Journal Club, 123*, A12–13.

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