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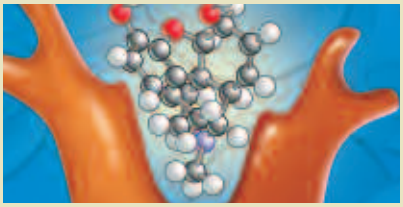

The NO TEARS structure can aid efficient medication review within a 10-minute consultation. It is a flexible system that can be tailored to the individual practitioner's consultation style:
Need/indication
Open questions
Tests
Evidence
Adverse effects
Risk reduction
Simplification/switches

Key words: *medication review, NO TEARS, primary care, older adults, polypharmacy*

Medication Review for the 10-Minute Consultation: The NO TEARS Tool

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The importance of an effective medication review cannot be understated. An annual or semi-annual review could reduce the risk of iatrogenic harm, medico-legal issues, and waste. It can empower patients and improve their satisfaction. The NO TEARS structure (Table 1)[1] can aid efficient medication review within a 10-minute consultation. It is a flexible system that can be tailored to the individual practitioner's consultation style.

Mounting recognition of the importance of medication review is reflected in various British documents such as the New GMS Contract,[1] the Older People's National Service Framework,[2] and the National Sentinel Clinical Audit of Epilepsy Related Death.[3] Medication review has been recognized as an important component in the Multifactorial Falls Risk Assessment in Older People.[4]

The physiological decline associated with aging is well documented.[5] While this may not be a problem when the patient is at rest or unchallenged, it reduces capacity to cope with both disease and treatment. Increasing complexity of illness may be associated with larger numbers of medical professionals. This can increase the risk of potentially inappropriate drug combinations.[6] Inappropriate medication prescribing (both overuse of inappropriate medications and underuse of appropriate medications) is an important issue in the older population, and with the popularity of preventative therapy, it is unlikely to diminish. Adverse reactions are implicated in 5–17% of hospital admissions.[7] With the dictum primum non nocere in mind, doctors need to be able to critically assess medication.

Re-authorizing and reviewing medication can take many forms,[4] and some issues may be better addressed by other members of the primary health care team, such as pharmacists. However, practitioners must remember that they take ultimate responsibility for every script signed. If they know the patient, they will be more aware of what has been tried previously and of what changes will be acceptable. In the United Kingdom, the Task Force on Medicines Partnership has described various levels of medication review (Table 2). The chosen method of review has often become a local tradition that can be difficult to challenge. It is important that a review system is agreed upon that includes all medications prescribed by different professionals and is clearly understood by all staff involved. Such a system should be equally transparent to the patient. It is suggested that practitioners keep the NO TEARS structure in mind when performing a six-month or annual review of treatments to maximize the potential of the 10-minute consultation.

Need

Is the treatment still indicated or has the diagnosis been refuted? For example, a putative diagnosis of angina may have subsequently been disproved. Treatments may have been inappropriately repeated or the dose may require adjusting. Non-pharmacological interventions may now be better. Does the patient know what the treatments were for and which were "as required" rather than essential?

Open Questions

This is an important opportunity to find out what medications the patient actually takes on a regular basis and his/her understanding of the treatments. Each physician will have his/her own way of asking such

Table 1: NO TEARS—Medication Review for the 10-minute Consultation

N	eed / indication: Has the diagnosis changed? Was long-term treatment intended? Is the dose correct?
O	pen questions: Solicit the patient's opinion and concordance.
T	ests: Assess and monitor the disease. Are further tests or investigations needed?
E	vidence: Is there a better approach to this illness now (e.g., new guidelines)?
A	dverse effects: Consider iatrogenic problems (i.e., side effects, interactions).
R	isk reduction: Identify the individual patient's risks.
S	implification/switches: Simplify the regime and implement cost-effective switches.

questions. It can be useful to show the patient or caregiver that you recognize some of the drawbacks of medications with questions such as "I realize a lot of people don't take all their pills. Do you have any problems, any that don't suit you?" or "Can you tell me what you're taking regularly so that I can check that we agree?"

Compare the patient's reply with the number of prescription requests.

Tests / Monitoring

Is disease control and symptom relief adequate? Are further tests needed to assess disease control? Do any therapies need blood tests or other monitoring?

If the patient is also being seen in specialized clinics (such as asthma or diabetes), avoid unnecessary duplication and concentrate on other issues.

Evidence / Guidelines

The evidence base for physicians is never static, and it is useful to pause and reflect on recent guidelines and evidence. There will be many patients who were given a diagnosis some years ago and who are now on suboptimal treatment. Such underprescribing may be an issue for a patient with a historical diagnosis of congestive cardiac failure who may need an echocardiogram and consideration of other therapies (for example, dose optimization of ACE inhibitors or beta blockers).

Some items are now considered to be of limited clinical value or less suitable for prescribing.[4] This can be readily discussed with the patient present.

Adverse Effects

It is important to recognize when symptoms are side effects of medication. For example, a patient with continuous cough can be spared many investigations if the possibility of ACE-related cough is considered. Check for duplications, interactions, and contraindications, remembering to ask about over-the-counter and herbal remedies. Check for the prescribing cascade. This is where an adverse reaction is misinterpreted as a new medical condition. For example, a patient who has been started on a nonsteroidal anti-inflammatory tablet becomes hypertensive. He/she may then be started on antihypertensive therapy unnecessarily, risking further adverse effects that are not recognized. To prevent the prescribing cascade, doctors should always consider any new symptoms and signs as a possible consequence of current drug treatment.[4,8]

Risk Reduction

This area can be considered in a number of ways depending on the particular patient or population involved. It can include opportunistic screening such as alcohol, smoking, family history, or body mass index. In the older patient, it is useful to identify an individual patient's risks and to establish whether medications are optimized to reduce this. For example, many are at risk of falls and this can be exacerbated by postural hypotension, hypnotics, etc.[9,10] They may be at risk of osteoporosis because of steroid treatment and this could also be addressed.

Recognizing any risks inherent in the repeat prescribing mechanism with which you are involved is important.

Switches/Simplification

Some regimes are unnecessarily complicated and can be simplified. Several low-dose preparations may be better replaced with one full-dose preparation. Local initiatives can be discussed and explained with the patient present. This would include generic switches, more cost-effective formulations, and altering unnecessary split doses. Synchronization of treatments is important to reduce wastage.

Discussion

Overlap between the areas of NO TEARS enables adaptation to individual consultation style. For instance, the need for bone protection in patients taking steroids could be recognized as an adverse effect by one reviewer, but to another it may be considered at the evidence or risk reduction stage. It increases the chance that a problem may be identified.

Table 2: Levels of Medication Review

Level 0: Ad-hoc	Unstructured, opportunistic
Level 1: Prescription Review	Technical review of list of patient's medicines
Level 2: Treatment Review	Review of medicines with patient's full notes
Level 3: Clinical Medication Review	Face-to-face review of medicines and condition

Source: Adapted from Task Force on Medicines Partnership, 2002.[4]

Table 3: Worked Example—Applying the NO TEARS Tool

Case		
A 78-year-old gentleman attends because four out of five of his medications need re-authorizing. He is known to have hypertension and visual impairment.		
What issues do you want to check?		
Repeat medication:		
Nifedipine	10mg twice daily	28 tablets
Lansoprazole	30mg once daily	28 tablets
Gauze	10x10cm	1x10
Acetaminophen 500mg p.r.n.	60 tablets	
Tramadol	50mg every six hours	60 tablets
Using the NO TEARS framework, the consultation could proceed as follows, with the caveat that different doctors will consider a particular issue at different points within the framework.		
Need/Open questions: He is happy with his medication, which he describes as, "paracetamol for knees, blood pressure tablets, and sometimes a stomach tablet." His records show that nifedipine was started last year for a persistent systolic hypertension average of 180mm. Further questioning confirms that tramadol was only used for a week following total hip replacement and can be removed, as can the dressing.		
Tests: His blood pressure is 165/70 and he had a similar reading three months ago.		
Evidence and Guidelines: Evidence is that the proton pump inhibitor dose should be reduced to maintenance dose after the initial treatment period. Is *Helicobacter pylori* eradication appropriate? The antihypertensive regime is not ideal as blood pressure control is inadequate and it could be exacerbating peripheral edema. As thiazide diuretics can be helpful for isolated systolic hypertension, it is worth considering replacing nifedipine.		
Adverse Effects: Ankle swelling increasingly bothers him.		
Risks: It transpires that he has trouble differentiating his tablets because of visual difficulties. Other agencies may need to be involved.		
Simplification: If nifedipine is to be continued, the regime may be simplified by changing from 10mg twice daily to 20mg once daily. This is likely to be cost-effective and may improve compliance. Lansoprazole can be switched to the generic version.		

Significant or controversial issues (e.g., benzodiazepine dependence) identified may need to be covered at a subsequent consultation and the number of authorized repeats adjusted accordingly.

Reading the coding and documentation of discussions will make the next review easier and may be important medico-legally. Recognizing the work done by other professionals within the health care team will avoid unnecessary duplication. It is unlikely that a medication review consultation will be a wasted appointment. Similarly, one of the foremost skills of the physician is time management, so most will concentrate on specific issues to avoid the process becoming overwhelming.

Efficient medication review needs to be tied in with adequate, safe systems for amending the computer following hospital discharge, out-of-hour visits, and out patient clinic attendances.

A structured approach to repeat prescribing, especially if undertaken by the doctor who knows the patient best, should improve the confidence of doctor and patient. ◆

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