ICGP Audit Toolkit

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Disclaimer

The contents of this document are intended as a guide only and although every effort has been made to ensure that the contents are correct, the ICGP or it agents cannot be held responsible for the outcome of any loss or damage that results from the use of this guide. It is accepted that other interpretations of the requirements for audit by the Medical Council may be possible in order for GPs to comply with their audit requirements under the terms of the Medical Practitioners Act 2007. This guidance is for educational and informational purposes only and should not be considered as legal advice.

Further assistance

For any audit queries not answered in this toolkit, please email your question to professionalcompetence@icgp.ie. These will be used as the basis for a regular feature in Forum magazine and a Frequently Asked Questions section on the ICGP website. It may not be possible to answer all individual queries directly.

Contents

Background

Part 11 of The Medical Practitioners Act 2007 is the foundation of the professional competence system which places a legal duty on doctors to maintain their professional competence by following requirements set by the Medical Council. This came into effect in May 2011 and as a result it is now obligatory for every practicing GP to conduct at least one audit per year, in order to comply with the requirements of competence assurance. It is recommended that practitioners spend at a minimum one hour per month in audit activity. This toolkit is an extension of the short guide and is written to help you conduct an audit in your practice that will help meet these requirements.

What is clinical audit?

The definition endorsed by NICE is that 'Clinical audit is a quality improvement process that seeks to improve the patient care and outcomes through systematic review of care against explicit criteria and the implementation of change. Aspects of the structures, processes and outcomes of care are selected and systematically evaluated against explicit criteria. Where indicated, changes are implemented at an individual team, or service level and further monitoring is used to confirm improvement in healthcare delivery'.[1]

The Medical Council rules (published on January 18th, 2011) specify however that "Audit activities should be focused on the practice of the practitioner and not on the processes".

The following is the Medical Council instruction in its Professional Competence guidance booklet:

Clinical audit is defined as the "systematic review and evaluation of current practice with reference to research based standards [and designed] to improve patient care". The setting of standards, the measurement of practice compared to a 'gold standard', the identification of deficiencies and addressing deficiencies (closing the loop) are the accepted components of clinical audit.

Clinical audit is recognized as having three elements:

1. Measurement – measuring a specific element of clinical practice

2. Comparison – comparing results with the recognized standard

3. Evaluation – reflecting on outcome of audit and where indicated, changing practice accordingly.

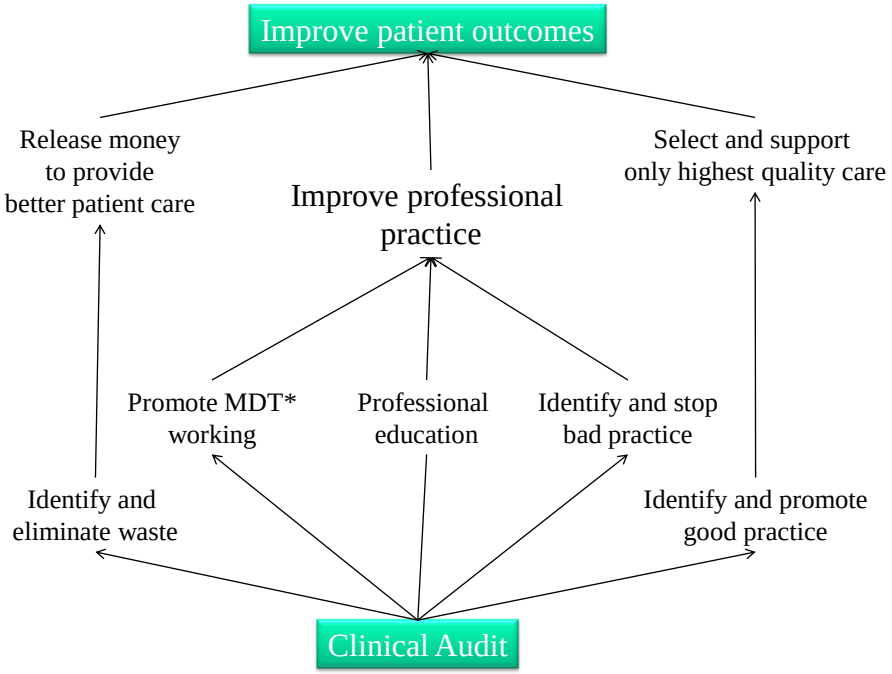
Purpose of audit

The objective of audit is to measure and improve performance but its results are not necessarily generalisable (applicable) to other practices.[2] Audit usually aims to influence activity at a local level.[3] Audit assumes that standards, guidelines or evidence supporting best practice exist and involves the comparison of current practice to these; hence it seeks to determine if we are doing what we should be doing.

Clinical audit can:

- Provide evidence of current practice against national/international guidelines or quality improvement standards
- Provide information about the structures, the processes or outcomes of a service
- Assess how closely local practice resembles recommended practice
- Establish if you are actually doing what you think you are doing
- Provide evidence/assurance about the quality of care
- Identify major risk, resource and service development implications
- Reinforce implementation of evidence-based practice
- Influence improvements to individual patient care.[4]

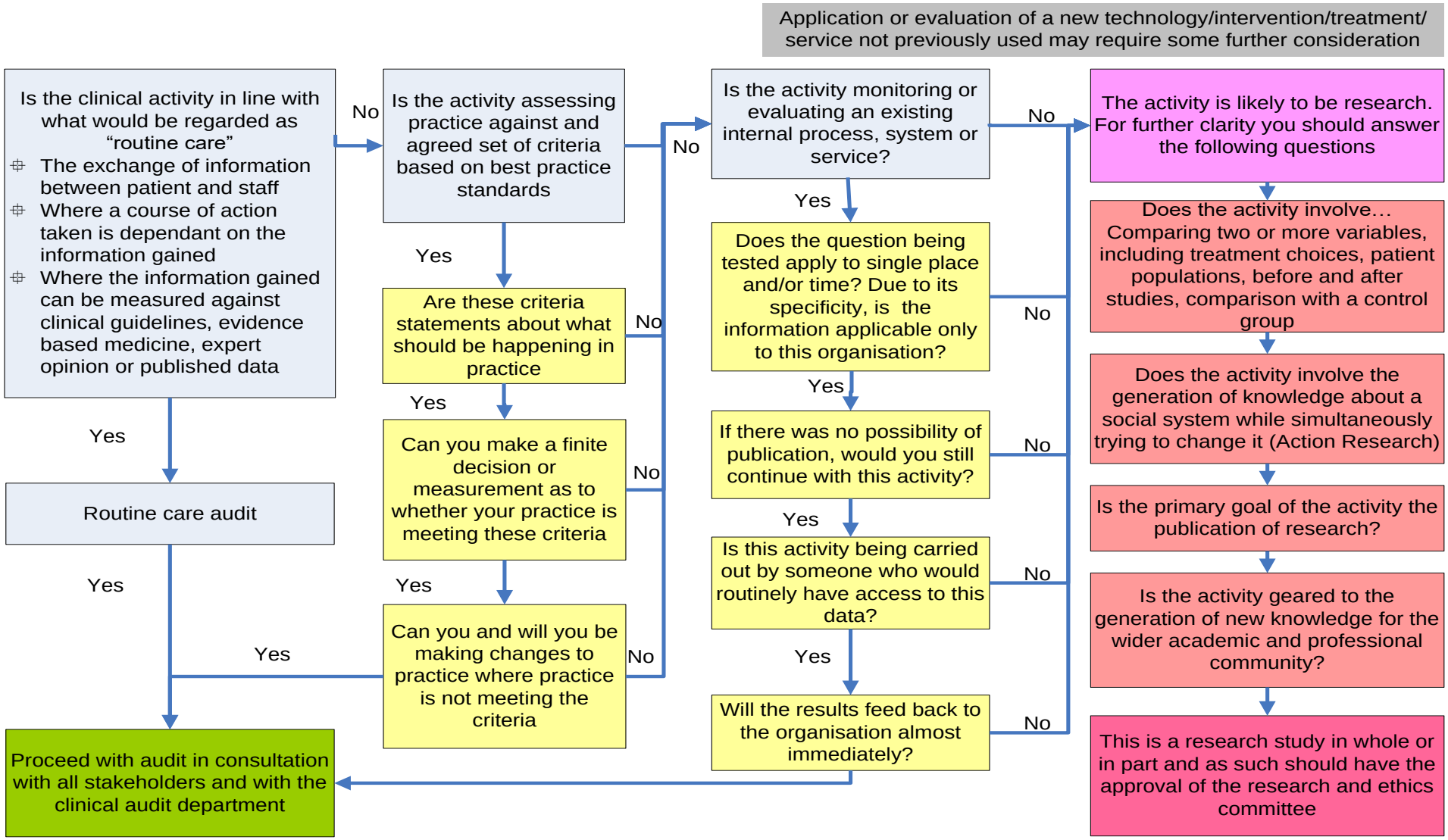
The process by which clinical audit leads to improved patient outcome is shown below[5]:



*MDT: Multi-disciplinary team.

Keeping your audit projects relevant to your practice, short, simple and easily manageable is the key to success. Choosing a topic is the first step and there should be agreement within the practice that the chosen topic for audit is a worthwhile area to study**.**

The diagram below, produced from elsewhere, may assist you to decide if your work is truly an audit[6].



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Audit Examples

Audit can be applied to many areas, for example[5]:

- Prescribing guidelines
- Practice guidelines
- Patient medication opportunities
- Improving consultation usage
- Accuracy of coding
- Medication errors / processes / overuse.

There are of course many possible audit topics within general practice and it would not be feasible to list all of them here. However, it will certainly be easier to complete the audit where there are existing data collection tools and guidance. Audit tools, including sample audits, created by the ICGP are available on the professional competence section of www.icgp.ie to assist you with your audit and provide ideas for audit topics. Other sources of audit topics include:
http://www.nice.org.uk/usingguidance/implementationtools/auditcriteria.jsp.
http://www.gp-training.net/audit/index.htm
http://gp.cf.ac.uk/all_about_audit.htm.

Some possible topics and sample criteria are outlined below[7]. In addition, Appendix 1 contains three examples of fully worked audits.

TOPIC **Angina**
EVIDENCE SIGN Guideline No 51
SAMPLE CRITERIA
Patients should be prescribed aspirin, unless contraindicated.
Patients should have had their smoking status recorded in the past 12 months.
Patients should have had their blood pressure checked in the past 12 months.
Physical activity should have been discussed and recorded in the past 12 months.

TOPIC **Chronic Obstructive Pulmonary Disease**

EVIDENCE ICGP - Summary of COPD management

SAMPLE CRITERIA

Patients should receive annual influenza immunization.

Patients should have received pneumococcal vaccine.

Patient's smoking status should be recorded.

Patients should have spirometry at least once by a trained person.

TOPIC **Coeliac Disease**

EVIDENCE UK Primary Care Society for Gastroenterology
Clinical Resource Efficiency Support Team, Northern Ireland

SAMPLE CRITERIA

Patients should have an annual review with weight, height, BMI, symptom assessment (pain, blood, bloating etc.) measured and the following investigations: Hb, Red cell folate, Ferritin, Serum albumin, Alk phos, Anti endomysial antibody.

A DEXA scan should be carried on women at menopause and men over 55 years.

Calcium supplements should be advised if intake poor.

TOPIC **Heart Failure**

EVIDENCE SIGN Guideline No. 35

SAMPLE CRITERIA

Patients should have an Echocardiogram or radiographic evidence recorded in their notes.

Patients should have had a medical review (either hospital or GP) within the past 12 months.

Patients should be on an Ace Inhibitor unless contraindicated.

Patients should be on low dose beta-blockers unless contraindicated.

TOPIC **Intermittent Claudication**

EVIDENCE SIGN guideline No. 27

SAMPLE CRITERIA

Patients should be prescribed appropriate drug therapy including aspirin.

Patients should have their smoking status recorded.

Patients should have had a random blood glucose check within the last 3 years.

Patients should have had their lipids checked within the last 3 years.

TOPIC **Rheumatoid Arthritis**

EVIDENCE SIGN Guideline No 48

SAMPLE CRITERIA

Patients should have had a FBC in the past 12 months.

Patients with a history of upper GI disease should be on GI protection.

Patients on 2nd line therapy should have had appropriate monitoring (depending on drug) in the past 12 months.

Patients on 2nd line therapy should have had a hospital clinic review in the past 12 months.

TOPIC **Warfarin Monitoring**

EVIDENCE ICGP - Warfarin in General Practice
SIGN Guideline No. 36

SAMPLE CRITERIA

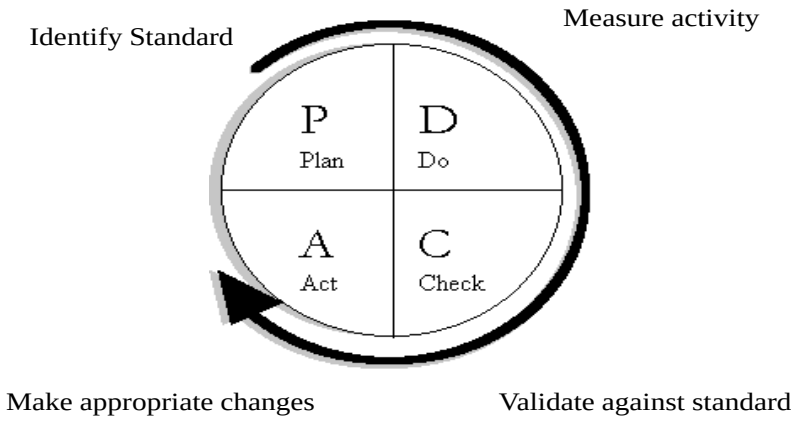
Patients should have the indication for Warfarin recorded.

Patients should have the anticipated duration of therapy recorded.

Dosage, INR and interval for repetition of INR should be documented in the patients' notes.

How to carry out an audit

The main stages in carrying out an audit are[5]:



The steps involved to achieve this are[8]:

1. Choose your topic

What makes a good topic?

· Agreed problem
· Important
· Good evidence
· Measurable
· Amenable to change
· Achievable within your resources (IT, space, financial and human)

What is an important topic?

· High level of concern
· High impact on health of patients or resources
· Common procedures or conditions

What are your organizational priorities?

· National standards or guidelines

· Local problems and priorities

· User views or complaints

2. Define your Aims and Objectives and reason for undertaking this audit

· *Aims*

Why are you doing this project?

What are you hoping to achieve?

· *Objectives*

How specifically will you achieve your aims?

What will you improve and assess?

3. Choose your Guidelines, state your Criteria and set your Standard

Where do you get your guidelines (note some texts interchange this with standards) from?

o National guidelines, standards & local priorities

o ICGP Impact documents

o Research

o Establish baseline standards

4. Select your Criteria from the guidelines chosen

What are the criteria?

The criteria are elements of care or activity, which can be measured.

5. Set your Standard

What is the standard?

Your standard (sometimes known as your target) is your desired level of performance and is usually stated as a percentage. Beware setting standards of 100%; standards should be realistic and remember perfection may not be possible.

Guideline	Criteria	Standard/Target
ICGP - A Practical Guide to Integrated Type II Diabetes Care	All patients with Type II Diabetes should be offered pneumococcal vaccination	80% of DMT2 patients to have had pneumococcal vaccination
ICGP - Warfarin in General Practice	Dosage, INR and interval for repetition of INR should be clearly documented in notes.	100% of patients on warfarin should have these items documented in their notes at their last visit.
ICGP - Summary of COPD management	Spirometry essential for diagnosis	95% patients should have spirometry at least once by a trained person

6. Collect, Analyze and Interpret the relevant data from your patients/practice

We collect lots of data but how much of it is used to make useful, informed decisions about improving patient care? Before you design a data collection tool, check what information you collect at the moment.

Consider:

· Retrospective (trawl existing records) or prospective (collect data from now)

· Who is your target population?

· What data will you collect? (only what is absolutely necessary)

· Who will collect the data?

· Where will you get the data from?

· What time period will you use? (i.e. start date and finish date)

· How will you select your sample? (how many subjects do you need)

Data collection – Key points:

· Develop a simple data collection form based on the information you want to collect.

· Check it out with colleagues to make sure that it is giving you the data you need to know.

· Don't be sidetracked into collecting information that is interesting rather than useful.

· Remember to anonymise any personal data so that patients are not recognizable.

Sources of data:

· Clinical records

· Disease or activity data sets/registers

· Survey/questionnaire

· Interview.

If you are undertaking a large audit or are using unfamiliar data collection tools, it is advisable that you first do a pilot.

· Make sure you leave time to analysis your data

· Do you need statistical help?

· Use spreadsheets if you can

· Present your data in a clear, understandable and visually appealing way.

· Consider what your data means

· How does it compare with your target?

7. Decide on what changes need to be made and implement them

Based on your analysis and interpretation of your data, you should determine what changes are required to enable you to meet an unmet target. To help you implement the changes develop an action plan, with consideration to who needs to be involved.

Following this you may set new targets, for example for year 2 etc.

8. After a reasonable timeframe, re-collect data and analyze it to ensure an improvement has occurred.

Clinical audit is about improvement. You should be changing or improving things as a result of audit. After you have implemented your action plan, you should check if the changes have resulted in an improvement and if you have reached your target. In the future, you may re-audit your practice on the same topic to ensure you are maintaining the improvements or you may set a new (higher target) next time.

Ethical Considerations

Clinical audits usually involve looking at information already collected about a patient or treatment and do not usually involve gathering new information. In addition, the data is mainly gathered for internal (practice) consumption in one practice for the improvement of care/services in that practice and is completed by the caregiver or a member of his/her team. Hence, audit does not usually require ethical approval. Identifiable data should not be used – only anonymous data should be extracted/compiled for the audit.

However, if you intend to gather new data, to interview/test patients, to permit access to files to an individual not in your employ, to transfer non-anonymous data outside the practice or to use the data for research, you should obtain additional advice regarding the ethical review requirements.

Data Protection Considerations

GDPR is the EU's new General Data Protection Regulation (EU) 2016/679. It came into force across all of Europe on 25th May 2018[9]. It replaced the EU's previous Data Protection Directive (95/46/EC). GDPR governs the collection, use and storage of all personal data of living individuals. The Data Protection Act 2018[10] is the Irish legislation that gives effect to certain aspects of the EU's GDPR in Ireland and repeals, for the most part, the previous Data Protection Acts 1998 and 2013. As you collect, use or store personal data in digital, manual, handwritten or any type of record, then GDPR affects you. The suitable and specific measures for data processing provided for in

Section 36 of the draft Data Protection Act 2018 are given further and more specific effect through the Health Research Regulations 2018 (formally titled Data Protection Act 2018 (Section 36(2)) (Health Research) Regulations 2018)[11]. While the Department has indicated that it will publish similar in relation to audit, it should be noted that these health research regulations relate to research and not to audit.

Given these changes, the Medical Council has published advice[12] in relation to conducting your audit.

In summary, during a clinical/practice audit, health data is processed and the process of data retrieval/extraction from the patient record in itself amounts to processing. However, such data can be processed in situations where is it necessary to do so for reasons of public interest in the area of public health, such as ensuring high standards of quality and safety of healthcare (Article 9(2) of the GDPR)[9]. Hence, you can lawfully process special category data for the purposes of clinical/practice audit, however you must ensure that you adopt suitable and specific measures to safeguard the fundamental rights and freedoms of the data subjects concerned. You, therefore, are not required to seek consent before processing special category data for the purposes of undertaking a clinical/practice audit once you ensure that you are compliant with the transparency obligation in the GDPR Article 5(1)(a)[9] by ensuring that comprehensive privacy notices are provided to your patients.

It is important to inform patients that the practice may use data for internal audit with an option for them to opt out of this use of their data. This can be included in a patient information leaflet or a privacy statement. It is not acceptable for external research staff to trawl through individual patient records without informed patient consent. It is also not acceptable to release the contact details of patients to researchers without informed patient consent. Only anonymized data should be used.

Registering your Audit

The facility to record your audit activity is contained within your Professional Competence ePortfolio on www.icgp.ie. This asks you to record the audit title, start date, end date and a brief description. You can also upload supporting documents, for example, the audit tool and report. Uploading supporting documents is optional but will facilitate review and validation, should you be selected for same.

Audit Time Plan

At the outset, you should devise a realistic time plan for your audit. A template[13] for your use is provided below.

TASK	PERSONS INVOLVED	MONTH						
		1	2	3	4	5	6	7
Preliminary considerations: Choose the topic								
Planning considerations/meeting: Decide/Agree aim and objectives, set standard, criteria and target, agree methodology and time plan and assign responsibilities								
Data Collection								
Analyze data								
Review Meeting/Considerations: Data interpretation and discussion of actions								
Action Plan development								
Action Plan implementation								
Re-audit								
Audit Report								

Audit Action Plan

If the findings of your audit show that your practice is equivalent to good practice, that is, you are following the guidelines/meeting the target, your audit is complete except to write-up the report. If not, you need to devise an action plan to help you to achieve your target. A template[13] is provided below to assist you in terms of what information should be contained in your plan.

Action Required	**By Whom [Lead Responsibility]**	**When [Deadline date]**	**Comments**	**Completion Date**

Audit Report

Whether you decide to disseminate your findings outside your practice or not, you will need to write up a report on the audit undertaken. The length of this document will depend on the complexity of the audit and the inclusion of the action plan and re-audit sections depend on our audit results – it could be anything from two pages in length. A basic report template[7], to fulfill your minimum requirements, is provided below.

Audit Report Template

Audit Title:

Practice/Participating GPs:

1. Reason for the audit
2. Criterion or criteria to be measured
3. Standard(s) set
4. Preparation and planning
5. Results of initial data collection
6. Description of change(s) implemented
7. Results of data collection post changes
8. Conclusions

However, should you decide to write a more detailed report, a general guideline is given below regarding headings and content.

Executive Summary/Abstract: This is usually written last and condensed using the headings from the report. You can either provide this in the format of an abstract, which is circa 250-300 words or as a full executive summary, which should be no more than two pages.

Introduction: Generally between half page and two pages in length. In it, you should explain the reasoning behind undertaking the audit and include review of the immediately relevant literature and any previous work undertaken. Also mention:

- when was the audit undertaken
- how many people/items were surveyed
- why the need for audit was identified
- the aim and objectives of the audit

In most cases, the relevant literature will be contained in the guidelines or the supporting guideline material. Hence, remember to reference the guidelines.

Remember, you should reference any ideas and data which are not your own, whether from electronic or print materials. A reference is required for a direct quotation, when paraphrasing or summarizing another writer and when using statistics, tables, graphs/diagrams or appendices which do not arise entirely from your own work. There are a number of standardized referencing styles- the most often used being the Harvard style (author and year of publication cited in text; the reference list is sorted alphabetically by author) and the Vancouver style (consecutive number allocated to each reference when stated for the first time in the text; the reference list is sorted by the assigned numbers).

Method and Sample: Briefly explain all relevant methodology, including:

- your standard, criteria and target
- your target population and how the sample was chosen if relevant
- whether data collection was retrospective or prospective
- the method used to collect the data
- the data collected
- who was involved
- what type of data collection tool or scale you used
- difficulties that you experienced
- timescale

As a guide to how much information to include here - this section should include enough detail to allow another practice to replicate your audit and/or to permit your practice to re-audit using the same approach and methodology. It will also assist if you are selected for validation purposes to have this information easily available, which will permit the independent assessor to establish that the records kept of audit activity can actually trace real activities undertaken.

Results: This section should include only the results from your audit. You should avoid making any comments on the findings here. If you use tables or figures, ensure they have a title and be understood without reference to the text. In particular, you should highlight areas of success and problem areas.

Discussion and Recommendations: This section contains an interpretation of your findings and possible implications. No new data should be contained in this section. If relevant, compare the results to other audits. Outline the strengths and weaknesses of your audit.

Action Plan: Identify areas for improvement and how you arrived at your action plan. Include your action plan.

Data Collection post changes and Plan to re-audit: Assess any changes achieved and if you reached your standard (target). If you deviated from the original methodology, explain why and discuss the impact of that on comparability etc. Present the findings of the and discuss if further recommendations/changes are required. Mention if you plan to carry out a re-audit in the future.

Conclusion: Summarize the full audit cycle undertaken – the results, implications and recommendations of each stage.

Acknowledgements: All those who were involved or assisted should be mentioned.

References/Bibliography: A bibliography is a list of works used (though not always cited) in the course of your audit/report. A reference list is a detailed list of all sources cited within the text of your report.

Appendices: Include a copy of the guidelines and the data collection form you used.

Frequently Asked Questions

How many patients are necessary to conduct an audit?

There is no minimum or maximum number of patients stipulated, however your sample should include current/recent patients. The purpose of audit is improved patient care through application of recognized standards and ongoing efforts to sustain this change. If you can show that you have considered the clinical management of patients with reference to an agreed standard, you have already conducted an audit. However the current recommendations of the Medical Council are that you should spend one hour per month on audit activity.

I have a very small practice. Does this make a difference to the type of audit that I can conduct?

In general if you have a very small number of patients it will only be possible to conduct an audit on a smaller number of patients. To overcome this difficulty it is recommended that you examine a greater number of criteria in these patients. Remember the current recommendations of the Medical Council are that you should spend one hour per month on audit activity.

I have a very large practice. Does this make a difference to the type of audit I can conduct?

By contrast in an audit of a very large number of patients it may only be necessary to examine one criterion, in order to fulfill the requirement of one hour activity per month on audit activity. However it is important that the "activities should be focused on the practice of the practitioner and not on the process"**,** so for example getting the practice manager to examine waiting times is not appropriate.

I only work part-time/as a locum in different practices. How will it be possible for me to conduct audit?

This poses different challenges. In order to overcome the difficulty of having very few patients it may be necessary to undertake a number of re-audit cycles of a number of

criteria. You could consider starting with an audit on the management of an acute rather than a chronic illness e.g., antibiotic or analgesic prescribing, management of an acute sore throat etc.

I am retired but would like to remain on the register and fulfill by professional competence but I do not see patients. How will it be possible for me to conduct audit?
The Medical Council have agreed to consider this issue further. However, they have stated that the practitioner should audit their own clinical activity whenever this is undertaken, even if only for short periods during the year, and whatever it involves including non-clinical activities.

How long does it take to conduct an audit?
It depends on the activity chosen but in general the recommendation is that one hour activity per month should be assigned to audit.

Can I re-audit the same topic the following year?
No specific guidance has been given on this by the Medical Council. However it is likely that in the event of scrutiny of compliance with the requirements of professional competence, you should be able to demonstrate that you have measured your audit activity against a reasonably up- to- date guideline. However, it is unlikely that it will be acceptable to continue repeating the same audit each year. Another suggestion is that you have a five-year cycle of audits with each of five audit topics completed once in a five-year cycle.

I already undertake audit as part of my work under the Methadone Treatment Protocol. Can I use this as audit activity?

This programme now has an on-line audit tool which is self-administered. This can be used to help fulfill your audit obligations.

What information do I have to provide each year to the Medical Council?

There is some minimum information that you must supply each year to your professional competence scheme as evidence that you completed an audit (as outlined in the 'Registering your Audit' section above). However, in the region of 5% will be validated by the Medical Council each year and those selected by the Medical Council will have to provide further detail (e.g. the audit report).

Should I be concerned about confidentiality/data protection if I am asked to supply further details to the Medical Council?

The audit report or any information requested will not be such that it will compromise patient confidentiality as patients would not be identified in same. However, the records you keep must be capable of substantiating the audit. National data protection requirements will be adhered to during the validation process. See the guidance above regarding data protection considerations.

Do 'processes' have to be excluded from the audit?

In some audits, it will be necessary or preferable to include some process elements so these do not have to be excluded; however, the entire audit cannot be based around processes for the purpose of fulfilling your professional competence requirements. For example in an audit of diabetes, review HbA1c levels rather than simply whether a blood test for HbA1c has been taken.

Is it acceptable to carry out a Practice Audit?

Yes. In reality, for most practices attendees are patients of the practice and not of an individual GP and hence you will be carrying out a practice audit.

Can all GPs in the practice conduct one audit?

It would seem acceptable once all GPs are actively engaged in the process and fulfill their individual time requirements. Each GP will have to keep records of their individual input e.g. attendance at the planning meeting etc. Each GP will also have to show they individually have complied with the recommendations of a guideline. At the very least if a practice audit has taken place, the practice will have to show how they have devised a protocol around the topic, based on the findings of the audit and how on the re-audit cycle all practitioners are adhering to it.

Where can I obtain a brief guide to the classification systems available for coding diseases?

Where can I obtain a brief description of disease registers – requirements and set-up?

See "Clinical Disease Coding and Classification: An Overview for General Practitioners" in Appendix 2.

Where can I obtain instructions on how to search my practice management software system for patients with specific conditions or on particular medication?

The following link is to an article on how to do this using the identification of swine flu vaccination patients as an example and details the steps for Dynamic GP, GPMac, Health One, Helix Practice Manager, Complete GP and Socrates.

http://www.icgp.ie/go/in_the_practice/information_technology/news_updates/AC25CD67-19B9-E185-83C388B882603FCA.html.

References

[1] NICE. *Principles for Best Practice in Clinical Audit*. Oxford, Radcliffe Medical Press, 2002.

[2] Maguire N. *Research Techniques in General Practice*. Dublin, Irish College of General Practitioners 2002.

[3] Ahmed S. Research Governance Framework. *A users' guide NHS – Leeds 2003* http://www.leeds.ac.uk/medicine/psychiatry/research/govern/menu.htm accessed July 2005.

[4] http://www.clinicalgovernance.scot.nhs.uk/section2/audit.asp

[5] Callanan, I. *Audit for the ~~Bewildered~~ Enlightened*. ICGP Research and Audit Conference, June 2010.

[6] Hill SL, Small N. Differentiating between research, audit and quality improvement: governance implications. Clinical Governance: An International Journal, 2006; 11 (2): 98-107.

[7] Bowie P, Garvie A, McKay J. Ideas for Audit: A practical guide to audit and significant event analysis for general practitioners. NHS Education for Scotland. November 2004.

[8] United Bristol Healthcare. How do I carry out an audit. http://www.uhbristol.nhs.uk/healthcare-professionals/clinical-audit/

[9] General Data Protection Regulation (EU) 2016/679

http://data.europa.eu/eli/reg/2016/679/oj

[10] Data Protection Act 2018 http://www.irishstatutebook.ie/eli/2018/act/7/enacted/en/pdf

[11] Health Research Regulations 2018
http://www.irishstatutebook.ie/eli/2018/si/314/made/en/pdf

[12] Irish Medical Council Guidelines on the implications of GDPR on Clinical Practice Audit 2019 https://www.medicalcouncil.ie/Existing-Registrants-/Professional-Competence/Guidelines-on-the-implications-of-GDPR-on-Clinical-Practice-Audit.html

[13] NHS Lothian. Clinical Audit Study Guide. West Lothian 2004.

Appendix 1: Audit examples

Example 1

Audit Title: *Management of Adult Coeliac Disease*

1. Reason for the audit

I have carried out an audit to determine if our patients with adult coeliac disease have an annual review as recommended in the literature.
As the management of chronic diseases moves more to primary care I felt this is an area I would like to address through our audit. I was aware that we had a number of patients with coeliac disease in our practice and had no formal follow up or review process for them in place.
I was also aware that the long term health risk for those patients with poor compliance with gluten free diet included increased risk of malignancy, nutritional deficiencies and reduced bone mineral density. For this reason I wanted to assess our current management of these patients.
The Primary Care Society for Gastroenterology in UK and the Clinical Resource Efficiency Support Team (CREST) in Northern Ireland recommend an annual review for patients with coeliac disease and that certain parameters are measured at each of these reviews. The items included are:

- Disease status:
    - Weight, height, BMI
    - Symptom assessment – pain, blood, bloating etc.
    - Investigations
        - Hb
        - Red cell folate
        - Ferritin
        - Serum albumin
        - Alk phos
        - Anti endomysial antibody
- Disease Prevention
    - Osteoporosis
        - DEXA at menopause for women/55 for male
        - Advise regular exercise, no smoking and reduce alcohol consumption
        - Calcium supplements if poor intake
        - Vitamin D supplements if housebound
        - HRT and bisphosphonates if osteoporotic
    - Hyposplenism

    - Blood film for Howell Jolly Bodies once – preferably at diagnosis
    - Vaccination against pneumococcus/HIB/influenza
    - Guidance about the risk attached to tropical infections such as malaria
- Medical Care
    - Management of associated medical problems
    - Discussion of familial risk
    - Review of prescription items
- Self Care
    - Discuss gluten free diet and compliance
    - Discuss membership of celiac society

2. Criterion or criteria to be measured

The long term health risk for those patients with poor compliance includes increased risk of malignancy, nutritional deficiencies and reduced bone mineral density. Studies have also shown however that dietary compliance positively correlates with regular follow up and knowledge about the condition. GPs are responsible for the appropriate prescription of gluten free products and regular follow up is an opportunity to provide patient centred care that is sensitive to the individuals life circumstances. The aim of regular follow up and improving dietary compliance is to reduce the overall complication rate in these patients. Hence the criteria contained in The Primary Care Society for Gastroenterology in UK and the Clinical Resource Efficiency Support Team (CREST) in Northern Ireland as documented above were used.

3. Standard(s) set

A standard of 40% of patients with coeliac disease should have an annual review.

There was no practice protocol for the management of patients with adult coeliac disease. Taking into account the percentage of private patients in the practice who may be having ongoing follow up with a secondary care consultant we felt 40% would be an achievable standard in the first instance. This would also allow for patient choice not to attend for review and those who are not available within the time period of the audit.

4. Preparation and planning

Firstly I discussed the idea with my trainer and the rest of the practice staff as they would have to be involved in the initial investigations and review to ensure they were happy to be involved in the audit.
The HEALTH One database was searched. Basic medical information was searched for ‘content including coeliac disease’. From the database of almost 6000 active patients 55 patients had a diagnosis of coeliac disease. I excluded any patients who were under 18,

RIP or did not have a biopsy proven diagnosis. Based on these exclusion criteria 11 patients were omitted from the audit.
We then developed a template for the HEALTH One system which detailed all the parameters that needed to be checked and documented at the review.
A practice meeting was again held to inform all staff members about the plan for the audit and the use of the template. The initial reviews were carried out in November and December 2009. The re-audit cycle was carried in February 2010.

5. Results of initial data collection

First Data Collection Date: 01/11/2009

Number of patients in practice: 6000
Number of patients with coeliac disease : 44
Number of patients with coeliac disease with annual review documented: 0
Number of patients with coeliac disease with weight documented: 16
Number of patients with coeliac disease with DEXA scan completed: 1
Number of patients with coeliac disease with bloods checked in previous 12 months: 22
Number of patients with coeliac disease with EMA checked for compliance: 0
Number of patients with coeliac disease who had been reviewed by a dietician: 41

How does this compare with the standard?
None of our patients with coeliac disease had a formal annual review. Some patients had different parameters monitored but there were no complete reviews.

6. Description of change(s) implemented

In order to implement change, 44 patients with a biopsy proven diagnosis of coeliac disease were sent an invitation to attend for review. At the consultation they were assessed based on a template which was contained in a drop down menu on HEALTH one. The template was as follows:
Symptoms
Weight/height/BMI
Hb/Folate/Ferritin
Albumin/Alk Phos/EMA
DEXA
Ca/Vit D
Dietician review
Prescription
Vaccination
After the review a new 'action plan' was put in place on the patients chart so that they would be recalled for a further review a year later.

7. Results of data collection post changes

Second Data Collection Date:01/02/2010 3 months later

Number of patients in practice : 6000
Number of patients with coeliac disease: 44
Percentage of patients in practice with coeliac disease: 0.74% (consistent with international population studies)
Number of patients with coeliac disease who had an annual review: 20
Percentage of patients with coeliac disease who had an annual review: 45%
Number of patients with coeliac disease with weight documented: 30
Number of patients with coeliac disease with DEXA scan completed: 13
Number of patients with coeliac disease with bloods checked in previous 12 months: 30
Number of patients with coeliac disease with EMA checked for compliance: 20
Number of patients with coeliac disease who had been reviewed by a dietician: 41

8. Conclusions

The second data collection three months after the initial showed an improvement in care with 45% versus 0% of patients having a completed annual review. This was 20 of 44 patients identified with coeliac disease. We achieved a standard of 45%.

There has been a significant improvement in the management of our patient cohort with adult coeliac disease. This will hopefully lead to improved compliance with gluten free diet and has increased our vigilance with regard to complications ensuring reduced morbidity and mortality within this patient group.
The time span of my audit was only three months and so I would hope that over the coming months the standard would improve further. We now have a database of patients with coeliac disease in our practice making it easy to repeat this audit in the future.
There is an 'action plan' on each patient. For those that have been reviewed in the past 12 months, a reminder is set at one year. For those that have not yet been reviewed, this is set from start of the study date. An alert will flash up when the chart is opened if this review is not complete. The template used for this audit will be used to record clinical data in a standardized way. This ensures that the best practice used in this audit will be carried out on all coeliac patients when they attend the practice in the future.
Once the audit was complete, we held a further practice meeting to discuss the results of the audit and the plans to continue this as part of routine practice into the future.

Example 2

Audit Title: Seasonal influenza and pneumococcal immunization in diabetic patients

1. Reason for the audit

A review of the literature identified a gap in information available regarding vaccine uptake rates among people with diabetes mellitus in Ireland. HSE figures are available for people with diabetes who have received vaccination under the GMS scheme. However, no information could be found examining the rate of uptake among all people with diabetes. The influence of GP/ practice nurse contact on the rate of vaccine uptake in diabetic patients has not been examined. Identification of a practice standard relating to the administration of influenza and pneumococcal vaccines could not be found. Streptococcus pneumoniae (pneumococcus) is a leading cause of serious infection in young children, older adults, individuals with chronic conditions e.g. diabetes, and those who are immunocompromised. It is the most common cause of bacteraemia, sepsis, meningitis, pneumonia, sinusitis and acute bacterial otitis media in children.
Influenza outbreaks result in significant morbidity in the general population, especially in the elderly and those with chronic conditions. Complications are common and hospitalizations increased in these groups.

The National Immunisation Guidelines for Ireland (2008) recommends pneumococcal vaccination:

1. For all children as part of the primary immunisation schedule
2. For those aged 65 years and older
3. For those who are immunocompromised or have immunosuppressive conditions
4. Chronic conditions e.g. Diabetes Mellitus.

At risk children over 5 years and at risk adults should receive a single dose of Pneumococcal Vaccine PPV23
Adults 65 years and older should receive a second dose of Pneumococcal Vaccine PPV23 if they received the vaccine more than 5 years before and if they were less than 65 years at the time of the first dose.
Annual influenza vaccine is recommended for persons 50 years or older (as recommended by WHO) and those older than 6 months who are at increased risk of complications due to influenza. Individuals with chronic conditions e.g. Diabetes Mellitus are recommended to have the vaccine between September and October. This maximizes the benefit of vaccination as the rate of influenza peaks between January and March.

2. Criterion or criteria to be measured

Patients with Diabetes Mellitus should have pneumococcal vaccination.
Patients with Diabetes Mellitus should have influenza vaccination.

3. Standard(s) set

Pneumococcal vaccine will be offered to 100% of patients with Diabetes Mellitus.
Our aim is to have an uptake rate of pneumococcal vaccine >95% in patients with Diabetes Mellitus.
Annual influenza vaccine will be offered to 100% of patients with Diabetes Mellitus.
Our aim is to have an uptake rate of influenza vaccine >95% in patients with Diabetes Mellitus.

4. Preparation and planning

In March 2010 a practice audit was conducted. The following methodology was used:

- Identify all patients with Diabetes Mellitus using computer generated search.
- List all patients on excel spreadsheet.
- Check if annual influenza vaccine received 2009-2010
- Check if pneumococcal vaccine given, age when given, if second vaccine required.

All patients with diabetes were contacted in September and October. Annual influenza vaccine was offered. Pneumococcal vaccine was offered if required.
Patients were contacted using the following methods:

1. General practice information leaflets, website and posters.
2. Posters and information in local newsletter and pharmacies.
3. Opportunistic vaccination.
4. Vaccination clinics.
5. Individual patient contact by phone and/or text message for those who have not availed of the vaccine.

The audit cycle used in March was repeated in November 2010 and defaulters contacted. The audit cycle was repeated again in December 2010 and January 2011. Patients who refuse vaccination had refusal and reason for refusal documented in Health Care Record (HCR).

5. Results of initial data collection

Results of the March 2010 audit (Season 2009/2010) are displayed in Table 1.
Table 1:

No. of patients	Type 1 (n=15)	Type 2 (n=65)	Total 80
PPV vaccine given	8 53.3%	35 53.85%	53.75%
PPV vaccine not given	7	30	
PPV vaccine refused	0	0	
Flu vaccine given	5 33.3%	31 47.7%	45%

Flu vaccine not given	10	34	
Flu vaccine refused	0	0	

The rate of vaccine uptake was well below expectation. This result was not expected as this practice is very pro-active in encouraging vaccination. The practice primary immunisation rate exceeds 95% every year. The clinicians in the practice encourage all diabetic patients to receive vaccination during consultations. However, as patients attend many different centres for their diabetes care, we were relying on opportunistic visits, general information leaflets and posters in surgery and local pharmacy to encourage people to come for vaccination.

6. Description of change(s) implemented

General practice information leaflets, website and posters were used to advertise vaccines. Posters and information in local newsletter and pharmacies were also used. Vaccines were administered opportunistically during regular consultations and specific vaccine clinics were also set up during October and November.
The GP and Practice Nurse contacted all diabetic patients who had not yet been vaccinated. They were given advice regarding vaccination and invited to make an appointment for vaccination.

7. Results of data collection post changes

Results from Season 2010/2011
Tables 2, 3 and 4 show the vaccine uptake rates for flu season 2010/2011. There were two more people diagnosed with diabetes since the last audit in March 2010. This brought the total number of people with diabetes to 82.

Table 2 shows the results following standard vaccination procedures. General practice information leaflets, website and posters were used to advertise vaccines. Posters and information in local newsletter and pharmacies were also used. Vaccines were administered opportunistically during regular consultations and specific vaccine clinics were also set up during October and November.

Table 2: Results of audit 18/11/2010

Vaccine	Type 1 (n=15)	Type 2 (n=67)
PPV given	10	53
PPV not given	4	15
Influenza given	5	44
Influenza not given	9	24
Refused	0	0

Vaccine uptake was only marginally improved from the previous audit. The GP and Practice Nurse contacted all diabetic patients who had not yet been vaccinated. They were given advice regarding vaccination and invited to make an appointment for vaccination.

Table 3: Results of audit 15/12/2010

Vaccine	Type 1 (n=15)	Type 2 (n=67)
PPV given	10	57
PPV not given	4	11
Influenza given	8	52
Influenza not given	6	13
Refused	0	3

Audit 2 completed in December 2010 showed an improvement in uptake of vaccines. However, due to snow and very poor weather conditions some patients failed to attend their appointment.
Further contact was made with anyone who had not refused vaccination, and an appointment was offered.

Table 4: Results of audit 31/01/2011

Vaccine	Type 1 (n=15)	Type 2 (n=67)	Total =82
PPV given	12 80%	60 90%	72 88%
PPV not given/ unable to contact	3	5	8
Influenza given	11 73.3%	57 86.6%	68 83%
Influenza not given/ unable to contact	4	7	11
Refused PPV	0	2	2
Refused Influenza	0	3	3

Our final audit was conducted in January 2011. We did not reach our target of 95% vaccination but our rate had improved considerably when compared with our audit in March 2010.
The rate of PPV vaccine uptake in our total diabetic population increased from 53.7% to 87.8%. The rate of Influenza vaccine uptake increased from 45% to 83%.

8. Conclusions

The value of audit was demonstrated in this study. The rate of vaccine uptake can only accurately be examined through audit. The estimated vaccine uptake rate among diabetic patients in our practice was far lower than the actual rate calculated. Before our original audit was carried out, we would have estimated a practice uptake of above 80%. We were very surprised with the poor uptake rate.
This audit and patient follow-up took 24 hours. Future audits on vaccine uptake should take much less time as our diabetes register has been established and an audit cycle is set up. Audit of any practice activity will incur a cost to the practice; however, the

clinical benefit to patients cannot be underestimated in preventing complications from seasonal flu or pneumonia.
Patients responded well to Practice Nurse or GP contact, stating that they hadn't realized the importance of influenza and pneumococcal vaccine. A systems approach to vaccination, which includes the maintenance of chronic disease register, will help improve vaccination uptake rate. A system of call and recall is planned for next season. Text alerts have become a very popular method of contacting people. It is planned to introduce a system of text alerts when vaccine is available for patients. The alert may be sent to a family contact if necessary.
Now that this audit cycle has been established, we plan to continue the audit process every year and to apply it to patient groups with other chronic conditions.

Example 3

Audit Title: Asthma Management in an Irish Suburban General Practice

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1. Reason for the audit

Ireland has the 4th highest prevalence of asthma in the world, affecting 1 in 8 Irish people and 1 in 5 children and studies have shown increasing incidence.
I am interested in asthma, and had seen that some patients were requesting repeat prescriptions for inhaler when they had not been reviewed in the practice for some time. We did not have a protocol for asthma management within the practice. The GPs within the practice recognised that there could be potential for change in our asthma management and there was a perception that current practice could be improved. Currently within Ireland generally there is a reactionary approach to asthma management with very little preventative care and chronic disease management. There is no financial incentive for prevention.

2. Criterion or criteria to be measured

The Finnish model of asthma care has shown that managing asthmatics in primary care with increased doctor education and annual review led to a 54% reduction in hospital stay, a reduction in mortality rate by 90% and a reduction in cost.
GINA guidelines recommend regular review to ensure all the goals of therapy are met, to ensure patient understanding of condition and its treatment, assess compliance and alter treatment where necessary. They suggest that the frequency of visits will depend on patient's severity of symptoms, and patient's confidence in managing their asthma. The British Thoracic Society states "asthma monitoring is best done by routine clinical review in primary care, and should be done at least on an annual basis".

Asthma UK recommend annual review if asthma is well controlled, more frequently if patient has symptoms, one month after any treatment change and 24-48 hours after an acute episode.
The Asthma society and ICGP Quality in Practice Committee Guidelines "Asthma Control in General Practice" were examined as they give an Irish perspective on asthma care.
A combination of these guidelines was examined, but in particular the GINA guidelines as they are the gold standard for asthma care and also the ICGP guidelines as they are a summary of the latter in an Irish context.

3. Standard(s) set

- Asthmatics should be on a register (90%)
- Asthmatics should be reviewed in the last year (90%)
- Adult asthmatics should have their smoking status documented and if smoking should be given brief intervention for smoking cessation (70%)
- In asthmatics under 18 years, parents should be asked if there are any smokers in the house (70%)
- As part of the asthma review patients should have their inhaler technique checked and documented (50%)
- If asthmatics are under 18 they should have their height/weight and centiles documented (70%)

4. Preparation and planning

Patients were identified as asthmatics by using SOCRATES computer system searching for those who had asthma treatment prescribed in the previous 2 years, and also those already on asthma register. Those with other respiratory diagnoses requiring inhalers, those who left practice, and those aged <4 years were excluded.
A pilot study of examining 30 charts to assess feasibility of study was carried out initially. Criteria were then reviewed and simplified and reduced to a feasible number. (The following were removed: spirometry, PEFR meter, written action plan and documentation of allergy/rhinitis advice. However these were still encouraged clinically where time allowed).
Information was collected from medical records retrospectively, examining the consultations in the September.
I informed the whole practice team of the aims and objectives of the audit project and the team agreed to help with the audit.
The data was collected on spreadsheet, using patient initials for confidentiality, analysed and compared with standard. Only audit information was collected.

5. Results of initial data collection

First Data Collection

Date: 15/09/2009

Number of patients in the practice	c6000	
Number of asthmatics	Children 106	Adults 126
Number of asthmatic on register	Children 45 (42%)	Adults 49 (39%)
Number of asthmatics reviewed in last year	Children 80 (76%)	Adults (74%)
Number with documented smoking status	Children 1 (<1%)	Adults 72(54%)
Number with inhaler technique checked	Children 5 (<5%)	Adults 4 (3%)
Number with centiles documented	Children 3(<3%)	NA

How does this compare with the standard?

These figures were below the standards.

Asthmatics	Children 106	Adults 126	Standard
On register	Children 45 (42%)	Adults 49 (39%)	90%
Reviewed in last year	Children 80 (76%)	Adults (74%)	90%
Documented smoking status	Children 1 (<1%)	Adults 72 (54%)	70%
Inhaler technique checked	Children 5 (<5%)	Adults 4 (3%)	50%
Centiles documented	Children 3 (<3%)	NA	70%

6. Description of change(s) implemented

At a practice meeting I reported the results of the first cycle to the team and repeated the aims and objective of my audit project.
Within the practice we did self education and asthma update for the GPs and practice nurse. I gave the three other GPs a copy of GINA guidelines and ICGP document. We obtained placebo inhalers. There was a consensual agreement on criteria to measure and targets so for example it was decided to not include PEFR monitoring. There was awareness that things may have been done but not documented.
It was decided that if there was a request for repeat inhalers or other asthma treatment that they would be asked to come in for review. Patients were targeted opportunistically when they came in for other issues or exacerbations and invited to come back if time did not allow. The initial plan was to write to patients to invite them for review but due to H1N1 virus the practice was unprecedentedly busy in September/October so this was abandoned.
This intervention was carried out over a five month period and re audit to complete the audit cycle was done in February. Over the five month period the practice team was reminded about the audit.

7. Results of data collection post changes

There was a significant improvement in the re-audit. The audit standard was reached for patients being on the register, that the patients were reviewed in the previous year.

The number of those who had a documented smoking cessation exceeded the target for adults but was below for children. There was an improvement in inhaler technique assessment and centile documentation but this was still below the proposed standard.

Date: 09/02/10 5 months later

Asthmatics	Children 111	Adults 130	Standard
On register	Children 111 (100%)	Adults 130 (100%)	90%
Reviewed in last year	Children 104 (94%)	Adults 127 (98%)	90%
Documented smoking status	Children 42 (38%)	Adults 104 (80%)	70%
Inhaler technique checked	Children 32 (32%)	Adults 24 (18.5%)	50%
Centiles documented	Children 36 (33%)	N/A	70%

8. Conclusions

The Finnish model of asthma care demonstrates that small clinical improvements can have significant impact on individuals and management within the practice. This has provided the background on the improvements made in this GP practice. The quality of care prior to intervention did not measure up to standards defined and following an educational intervention and standardised care, there has been an improvement. Targets were met for patients being on a register, review in last year, and smoking status in adults. There was a significant improvement for smoking status of family members, inhaler technique assessment and documentation of centiles, however this was not still below the target set.

This audit has led to an improvement in asthma care over a short period of time. There was agreement amongst GPs in the practice that asthma was a worthwhile area to study. There has been an improvement in the quality of note-keeping and records including documenting control in terms of GINA guidelines.

Patients were generally happy to be called in for review, even those who were "controlled".

Parents were very receptive to having centiles documented for their children and having to ask directly about smoking during the consultation overcame barriers which may have been avoided to prevent conflict.

The fact that inhaler technique figures were low can be explained by the fact that many patients were reviewed opportunistically so wouldn't have brought inhalers with them. However this is an area that needs to improve as it has been shown to be an effective strategy in good asthma care. There has already been improvement and patient satisfaction with simple changes made.

Subsequent asthma audits would be easier as there is now an established register. From this audit I have learnt that small focused audits are better and its best to restrict the number of criteria to be measured. All participating GPs have to be motivated and involved in the audit from the start. Noticeable improvement in care and perceived patient satisfaction was achieved in this study and by completion of the audit loop we can see the value of the intervention.

Appendix 2

Clinical Disease Coding and Classification

An Overview for General Practitioners

Dr. Brian Meade

What is a classification system?

A classification system groups concepts together for a specific purpose. In health it is sometimes useful to group certain diseases or presenting complaints together in order to be able to study them in more detail. Classifications systems frequently use codes to group items together.

What is a disease coding system?

Disease coding systems assign a code or value to a specific entity. In ICPC-2 the code for Asthma is R96 allowing this diagnosis to be easily retrieved by a computer application.

Why do we need disease classification systems when using computers?

Doctors are trained to write narrative accounts of their encounters with patients but computer systems are unable to use this type of information when performing tasks such as finding patients with a particular disease or on a particular drug. As an example, an attempt by GPs in Exeter using computers in the early 80's to identify all cases of patients with Otitis Media over a given period, grossly underestimated the incidence of this condition. This was because some GPs diagnosed Otitis Media, others "middle ear infection" and some simply wrote "OM" into their computer records. The system simply couldn't cope with the many different terms and didn't have the "intelligence" to know that they were all the same condition.

While computer systems are getting much better at dealing with different meanings, applying a single code to a condition like Otitis Media allows GPs to still record whatever they like in the clinical notes but the computer will "know" what the GP wants to indicate in each case. Classifying codes into different categories will further add clarity to this and assist in the retrieval and linkage of information.

Other potential benefits of using coding and classification systems include

- Supports audit, training and research within GP practices due to the ability to retrieve high quality information quickly
- Supports the identification of patients suitable for preventative medicine interventions such as immunisation or screening programmes
- Allows practices to quickly establish a disease register for coded conditions
- Supports the linkage of particular signs and symptoms with outcomes e.g. how many cases of patients who present with weight loss in General Practice are eventually diagnosed with a malignancy
- Supports the exchange of information with Public Health and Hospital information systems
- Supports the exchange of information with GPs from other countries using different languages
- Can provide the information required to run decision support systems which can assist GPs in making correct diagnoses and better management decisions
- Supports the management of chronic disease by assisting with the formation of disease registers, disease management protocols and recall
- Supports more efficient organisation of electronic patient records e.g. all consultations on an individual patient for a condition such as Asthma can be filtered out and examined in isolation from all other consultations

- Allows the rapid retrieval and organisation of information.

Does coding disease make a consultation longer?

Ideally coding and classification systems should work in the background and GPs using IT systems should be virtually unaware that they are in fact coding diseases, drugs, investigations and other items. In modern computer applications, once an item is selected from a drop down menu it will be coded correctly by the software and there is no need for the GP to remember codes or refer to a coding document.

Other software applications offer search tools within the software so that when the GP types the first few letters of the disease, the application will offer a list of matches from a list of the codes embedded within the system. Selecting the nearest match also selects the code and links it to the patient's record.

Which classifications systems are in use in General Practice?

ICPC-2 – International Classification of Primary Care

This classification system is used in all GPIT certified GP software systems. It receives a lot of criticism from GPs here as it has far fewer diagnosis codes than other systems such as ICD 10. ICPC-2 however was not designed to be simply a disease classification system. One of its principle aims was to capture the interaction or "episode of care" between the GP and the patient. It was designed to be structured around the SOAP (S for subjective information, O for objective Information, A for assessment and P for plan) method of recording consultation information. It therefore offers codes for various components of the consultation such as presenting complaints and investigations carried out, as well as final diagnosis.

ICPC-2 has a biaxial structure. The first axis which is primarily orientated around one of the 17 body systems on offer is represented by a letter. D is for digestive and N is for Neurological for example. The second axis is represented by a number which covers the seven components (presenting symptoms, diagnosis etc) contained in each of the body systems. The result is a simple code with one letter and two digits unique to each item on the list of around 1300 items.

ICPC has been in existence since 1987 and has been adopted by WONCA for use within general practice and primary care. It is widely used across Europe and has been translated into 22 languages so far.

ICPC-2 Plus

This classification system is based on ICPC-2 and was developed by the Family Medicine Research Centre in Sydney, Australia. It is similar to ICPC but uses more complex codes and over 7000 terms. This system is often referred to as the BEACH coding system as it is used in a national data collection programme in Australia known as "Bettering the Evaluation and Care of Health" which provides valuable epidemiology information to the Australian Government.

Although not used much outside of Australia it is mapped to ICD 9 and is also being mapped to SNOMED CT (see below). ICPC-2 Plus is being made available by some GP software suppliers here to Irish GPs who find ICPC-2 and/or ICD 10 not meeting their needs. The future of ICPC-2 Plus is somewhat uncertain given the stated intention of the Australian Government to move to SNOMED CT for use within their health system.

ICD 10 – International Classification of Disease

The ICD classification system started out as a method of classifying cause of death in the late 19th century. It has evolved now into an extremely rich classification system covering signs, symptoms, procedures, social circumstances and causes of injury as well as diseases. ICD is published by the WHO and is widely used across the world, primarily for the recording of morbidity and mortality statistics.

While it is excellent in this role, it is perhaps too detailed for use by GPs and does not cope well with many of the undefined conditions found in general practice. ICD 10 is however available in most Irish GP software systems and can be used either alone or in conjunction with ICPC-2.

SNOMED CT – Systemised Nomenclature of Medicine Clinical Terms

SNOMED has arisen from SNOMED RT, a system used mainly by pathologists in the US and NHS Clinical Terms Version 3 which is used in the UK. The latter evolved from the very popular Read coding system developed for use by GPs in the UK in the eighties and still widely used there today. Because of this, the system should be suitable for use in Irish general practice also.

The system has a multi axial structure and is a lot more complex than ICD and ICPC-2. It not only defines and codes individual concepts; it also defines the relationship between concepts and therefore allows much greater flexibility in defining what is observed. It is designed for use both in primary and secondary care and is driven by clinical rather than statistical analysis requirement. SNOMED supports 315,000 concepts with 1.3 million relationships between these concepts.

Currently SNOMED CT is used by a number of large health organisations in the US. Its use however is likely to grow in the UK due to the involvement of the NHS in its development for use in General Practice there. Collaboration between SNOMED and a widely used electronic messaging standard known as HL7 is also likely to increase its use in many countries. It is not yet available to Irish GPs.

Disease Registers

One of the benefits of coding disease is that it is then possible to develop an electronic disease register. It is important to understand that using a GP software system which offers a coding system does not automatically provide an accurate disease register. Some patients with particular conditions will not present to their GP for management of the condition as they are attending private consultants or out patient clinics. On the other hand some patients who have been coded correctly will die or move to other practices and should not therefore be included. Maintaining an accurate and up to date disease

register is a “work in permanent progress” and it is good practice to have one member of the practice responsible for keeping the register up to date.

In order to set up a disease register, consider the following sources of information

- A search of the patient population using GP management software. If the practice has not been using a classification system, then the search will need to done using free text terms. Searching for diseases using free text is fraught with difficulty not least because many disease have several names and each of these will need to be searched for individually
- A search of the patient population using GP management software for drugs associated with certain conditions e.g. Glucophage, Diamicron
- Local pharmacies may be able to provide a list of patients on drugs associated with certain conditions
- Local hospital clinics may provide a list of patients attending clinics for the target condition
- Individual patients may assist in setting up disease registers. Consider placing a notice in the waiting room advising patients that the practice is in the process of establishing a disease register and outline the reasons why patients may wish to be included. Patients can then be invited to confirm that they are on the register and that their contact details are correct, in the same way that voters can confirm they are on the electoral register.

In order to maintain an accurate and up to date register, consider the following measures

- Ensure that all GPs and practice nurses in the practice know which conditions you are coding
- Ensure that all GPs and nurses are coding target conditions in the same way
- Ensure that all patients who die or move away from your practice are marked inactive in the practice software as soon as this becomes known
- Put in place a system where discharge letters and consultant reports containing new diagnoses are not missed and the new condition is coded correctly in the patient record
- Put in place a system where prescriptions for certain drugs are not given out unless a matching condition appears in the patient record
  e.g. hypoglycaemic agents – Diabetes
  inhalers – Asthma / COPD

- Review the register regularly by printing out a list of names and contact details of those linked with certain conditions. If certain names are missing or appear twice on the list, investigate why this is occurring.

Dr. Brian Meade
March 2011

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