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# JMCFD

JOURNAL OF THE MALTA COLLEGE OF FAMILY DOCTORS



Primary health care



# JMCFD

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## Journal of the Malta College of Family Doctors

The mission of the Journal of the Malta College of Family Doctors (JMCFD) is to deliver accurate, relevant and inspiring research, continued medical education and debate in family medicine with the aim of encouraging improved patient care through academic development of the discipline. As the main official publication of the Malta College of Family Doctors, the JMCFD strives to achieve its role to disseminate information on the objectives and activities of the College.

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# MCFD President's Report

## December 2017 – November 2018

**Prof. Pierre MALLIA**

### **NEW PRESIDENT**

As you know this is my last year as President of the MCFD as I have served two terms. I had recommended myself that the statute be amended so that a President cannot serve more than two consecutive terms, in line with many international standards.

Following last years' election of Dr. Philip Sciortino as President-Elect, Dr Sciortino found it necessary not to fulfill this position and therefore another election was called in which Dr Edward Zammit was elected. The purpose of having an election for President-Elect one year before is for the person to gradually learn what is going on in council and therefore to have a smooth transition. We were lucky that Dr Zammit has been on Council for several years.

I would like to publicly acknowledge the hard work that Dr Sciortino has done over the years, especially with running the Continuing Medical Education (CME) programme which many members attend and, whilst wishing him well, would hope that he continues to give support to the College when necessary.

Dr Zammit is well placed to take over. He is experienced in one of the most important ventures of the College – that of the Summative Assessment for specialist trainees. He has been examination lead for the past few years. Good luck and I give him my full support.

### **CME**

As from next year the council will be providing CME both online and also through the popular evening meetings. Council has often discussed the eventuality of the introduction by the Medical Council of re-validation for medical doctors. MAM (the Medical Association of Malta) are aware of this and will probably propose CME as well. For this reason Council will be working that the CME follows the curriculum we have for Specialist

Training. It is impossible of course that all the curriculum be done in one year; conversely it is feasible if done over five. For this reason those responsible for CME must see that the salient topics are visited at least once every five years. In this way one can enter the programme at any time and over a five-year span, will have covered the necessary updates.

The next Council must see that CME points are awarded fairly between these important updates and other events which it recognizes. Those who follow online CME must show that the necessary updates were included or follow those which the college recognizes. Once the MCFD becomes recognized as an educational body, this work becomes, along with the Specialist Training Programme in Family Medicine (STPFM), an important factor which supports family doctors.

### **THE STPFM CURRICULUM**

Since its inception the curriculum has not been updated and therefore I have taken it upon myself to coordinate this. I shall be issuing a call for those who are willing to revise a chapter and update it for any relevant content. Guidance of course will be given and it should be a task within the grasp of any family doctor, especially having a special interest in an area. NICE and other guidelines will be used in the process, giving them a contextual relevance. Council will discuss any fees which may be applicable. Those interested are asked to please contact me on my university email address ([pierre.mallia@um.edu.mt](mailto:pierre.mallia@um.edu.mt)) and state their preference.

### **SPECIALIST ACCREDITATION COMMITTEE (SAC)**

The MCFD has been asked to make proposals to the amendments to be made to the law concerning the specialist register. We notice that whilst all specialties

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are listed in a section called 1c, family medicine, although recognized by the SAC as a specialty, is in a separate section entitled 1d and which pertains to a GP register. This follows EU procedures. However we have made a recommendation that since in EU countries GPs are not listed in the specialist registers of respective countries, in our case either Family Medicine is put in section 1c as well, or be listed in both (to allow for those who are not specialists by grandfather clause or Summative Assessment to be listed in 1d for Medical Council purposes).

### **PAYMENT OF EXAMINATION LEADS**

We have had a recommendation that examination leads for the STPFM start receiving proper payment for their important service to the Summative Assessment which includes the process of Clinical Skills Examination and the Applied Knowledge Test. This requires a considerable amount of work and is a difficult task. Since these people cannot have trainees due to their involvement in the examination, it was suggested that they receive the same salary as trainers. Since their work is more time-consuming and is one of the most important the College has at the moment, the council agreed to this request.

During the visit of IDA Dr Jeremy Stupple last July, we met with the new Primary HealthCare CEO and she asked for a report to make the request for their salary to come from the department of Primary HealthCare. I duly prepared this report giving statistics and details of the examination process and also how the new trainees can save the service a lot of money. No reply has been received to date and we will bring this up with her during our next meeting.

However, Council also decided that, until such needs are met by Primary HealthCare, and without unduly increasing the cost of the exam for the candidates, the College shall give this salary to the members of the assessment team and review the situation in two years' time. This decision was approved by the Annual General Meeting of the College.

### **JOURNAL**

As chief editor of the journal I again admit that my three co-editors, Mario Sammut, Anton Bugeja and Glorianne Pullicino lead the whole show. I make the overall decisions and the one we had to do this year was to make it only online as it has become very difficult to obtain sponsors. This is indeed a pity as the journal is getting

more and more studies by young doctors, especially those working in health centres. These studies are important not only for the data they collect but to be quoted on research articles. One can also find the journal on the University of Malta Library website.

### **ENDCARE PROJECT**

The End of Life Erasmus + 'EndCare' project which I was coordinating through the Bioethics Research Programme at the University of Malta has come to an end. It resulted in two books to be published by Springer, a collaborative Consensus document on End of Life between the faculties of Medicine, Laws, and Theology which was distributed at Mater Dei Hospital and which can be found on the University website, a curriculum on tackling problems within institutions and a book summarizing the salient document to be published locally. These do not include ten theses on end of life which were encouraged in the three faculties mentioned above. The documents were disseminated and a keen interest shown by UNESCO and WHO.

The MCFD has decided that it would be disposed to coordinate EndCare 2 should this not be done through the university. EndCare 2, if funds are won, will concentrate on the community and involve family doctors, and hopefully the department of Primary HealthCare, Hospice Malta, the Malta Health Network of patient organizations, and local religious institutions. These are salient for public education on what is possible at end of life and explain the suffering caused by extraordinary and futile measures and the legitimacy of pain relief, even if life is hastened by a few days once death is the inevitable outcome. Hospice Malta has also shown keen interest in the first project and the Bioethics Programme has accepted to coordinate a Masters in Palliative Care in the future.

### **OPPORTUNITIES FOR PRIVATE TRAINING**

The opportunity for Specialist Training in private practice is still an option which the MCFD keeps open. Of course we hope that the Department of Health will have a greater intake of doctors wishing to specialize in family medicine as there is an increased interest in this area. Because of this the college has considered private trainers. Of course this would involve extra expense on the part of candidates, especially to pay for the trainer, but this can be offset by collaboration with the Health Department that may accept candidates to work in health centres

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and continue work as medical officers in hospital, where rotations can be coordinated. This will be considered further in the future of course by the next Council.

### **PERSONAL THANKS**

I wish to personally thank those people who have supported me personally and the Council during the past six years. As President I learned more about chairing and giving way to ideas other than my own. It was indeed learning to serve other people – something I have to admit I have not always been successful in. I wish to thank especially Drs Philip Sciortino, Jason Bonnici, Edward Zammit, Daryl Xuereb, Mario Sammut for personal advice, help and/or mentorship but of course all those who have shown enthusiasm on council. I see that people like Drs Jacob Vella and Elanja Reiff are the future of family medicine. I cannot mention all names but I am sure that they know I mean them as well.

I hope of course to continue helping the College in any way I can, especially with protecting that which we have achieved on SAC, through projects, and international relations. But of course, as I did before Dr Jürgen Abela's tenure, I will offer help wherever it is necessary.

Thank you all members who support the College by paying their dues, participating in activities and work, and especially those who attend the CME organized by the team led by Philip Sciortino up till now. I look forward to our CME also on the website which Drs Leonard Callus and Jacob Vella are organizing.

# A study on the attitudes of Foundation doctors in Malta towards general practice and their experience while working in the specialty

Dr Marilyn BALDACCHINO and Dr Jurgen ABELA

## ABSTRACT

### Introduction

A substantial number of Foundation year (FY) doctors have a three month rotation in family medicine at the health centres in Malta. The aim of the study was to understand the factors that influence FY doctors' attitudes towards general practice (GP) and the potential reasons why these doctors would choose a career in GP.

### Method

This consisted of a cross-sectional questionnaire study carried out with FY doctors in Malta. The online server Google Forms was used to collect data and manage the questionnaires. Data was extracted to Excel 2010 with which it was analysed.

### Results

Over the one-year study period 61 FY doctors had a GP rotation. The questionnaire response rate was 54%. For 72.7% of respondents, choosing a rotation in GP had been a priority; of these, 88% would consider a career in GP but it was the preferred career choice for only 50%. Sixty-nine point six per cent of doctors gave a very positive rating (more than 7 out of 10) of their experience at health centres, and 78.8% experienced a positive change in attitude towards the specialty of family medicine after this rotation. The rotation was rated as having the greatest influence on career choice. Quality of life was the most popular factor attracting doctors to GP. Lack of respect towards general practitioners and the

challenge of managing clinical uncertainty with patients in family medicine were the two main factors which discouraged doctors from such a career.

### Conclusion

General practice is a popular specialty in Malta and the Foundation rotation in GP was found to be one of the main factors influencing career choice. In view of this, it should be ensured that during the rotation doctors get a complete experience of general practice, which is a true reflection of what the specialty entails.

**Keywords:** general practice; attitude; career choice.

## INTRODUCTION

After graduation from medical school, newly qualified doctors in Malta have to complete the 2-year Foundation Programme before starting specialty training. The Foundation Programme exposes doctors to different specialities in a hospital-based as well as primary care environment, during which they get hands-on training while being supervised (Foundation Programme, 2013). This gives doctors the opportunity to experience different specialities and discover the areas which they would be more inclined to pursue.

In Malta, general practice is one of the specialities attracting a great number of applicants on a yearly basis for its specialization programme. This is in contrast to the situation in the UK, where general practitioners (GPs) are referred to as a 'scarce resource' (Majeed, 2017) with an ongoing campaign to attract more doctors to the speciality

(NHS UK, 2018).

The main aim of the study was to understand the factors that influence Foundation doctors' attitudes towards general practice (GP) and the reasons why these doctors would choose a career in GP. Understanding these factors is especially important when working to attract more trainees and improving the experience of doctors and trainees in the speciality.

### Objectives

The objectives of this study were:

- i) To understand the factors that influence Foundation doctors' attitudes towards general practice.
- ii) To understand the reasons why doctors would choose a career in general practice.
- iii) To evaluate the experience of Foundation doctors during their GP rotation and use the results obtained to provide recommendations for improving their experience while working at health centres in Malta.

### METHOD

#### Data collection

This consisted of a cross-sectional, mainly quantitative, questionnaire study carried out with Foundation Year 2 (FY2) doctors in Malta who started a general practice rotation between July 2017 and July 2018. An email explaining the objectives of the study, with the link to the online questionnaire, was sent to all the FY2 doctors after

completion of their rotation in GP. The questionnaire was completely anonymous. Emails were sent through the gov.mt mail server and a reminder email was sent to all doctors after one week. The online server Google Forms was used to collect data and manage the questionnaires.

The questionnaire was devised based on themes emerging from a literature review of similar studies carried out with medical students and junior doctors in the UK (Henderson, Berlin and Fuller, 2002; Merrett, et al., 2017; Wiener-Ogilvie, Begg and Dixon, 2015). The questionnaire was reviewed by two independent authors, who were GP trainees, and suggested modifications were considered while preparing the final version of the questionnaire.

The questionnaire consisted of the following main sections:

- i) Demographic details.
- ii) Questions about the experience of the FY2 doctor during the GP rotation and whether this placement changed the individual's ideas or attitudes towards general practice. 'Free-text' space was provided for doctors to further explain their reply to this question.
- iii) Question about current preferred career choice, and selecting from a provided list of factors that will influence this choice.
- iv) Question about factors that would make the FY2 doctor consider choosing a career in general practice.
- v) 'Free-text' space was provided at the end of the questionnaire for any comments or suggestions.

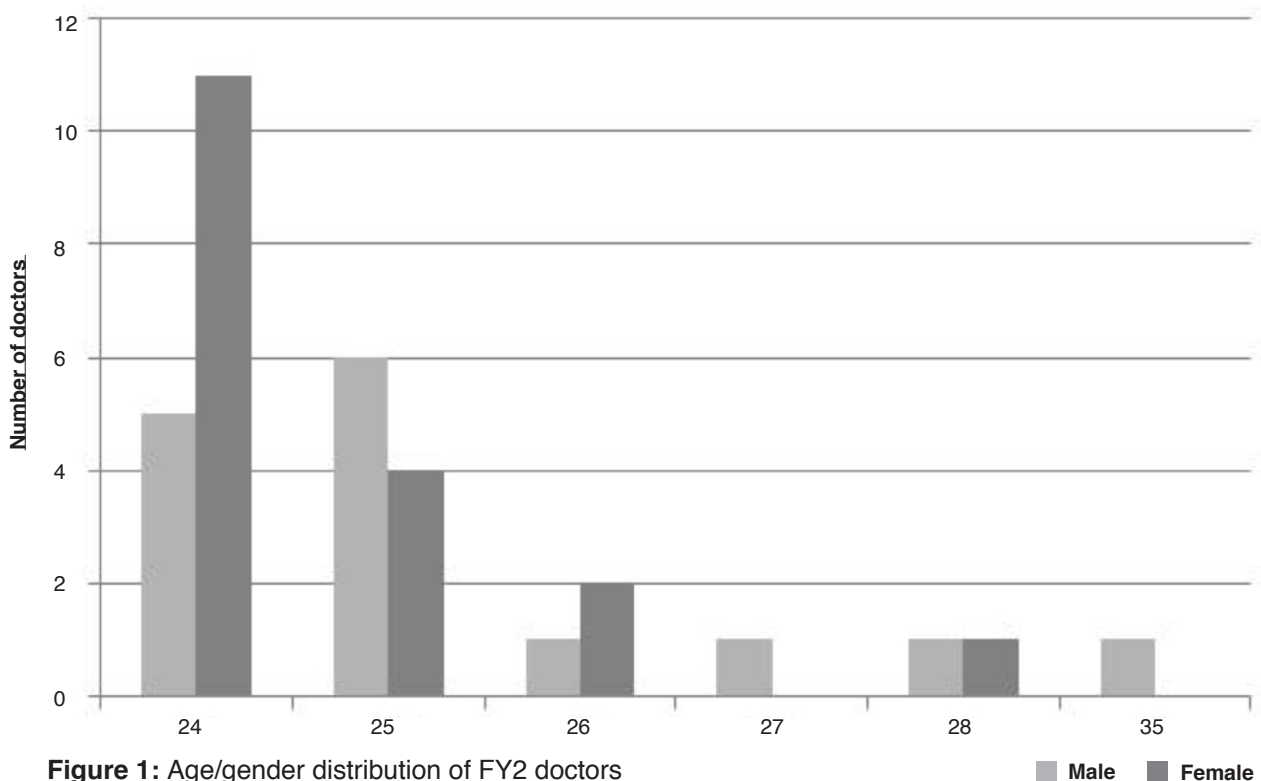
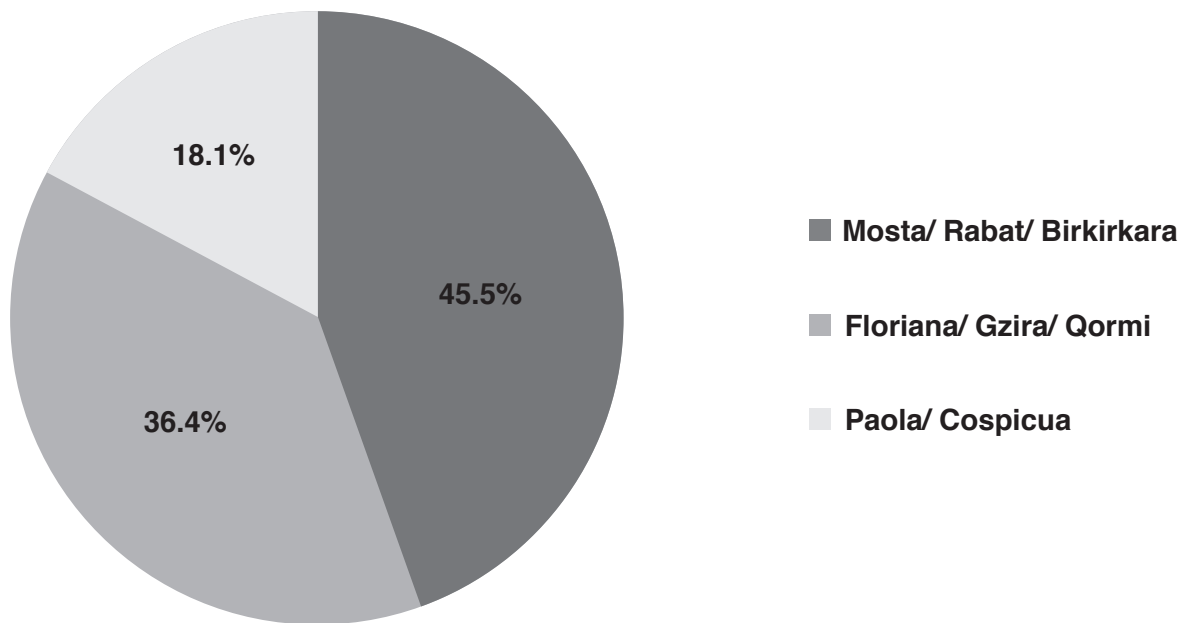


Figure 1: Age/gender distribution of FY2 doctors



**Figure 2:** Percentage of responses by area of FY2 rotation

### Data analysis

Data from the questionnaire on Google Forms was extracted to Microsoft Excel. Subsequently data analysis was carried out using Microsoft Excel 2010. In view of the small sample number, no advanced statistical techniques were used to analyse the data. The qualitative section of the questionnaire was analyzed using Thematic Analysis.

### Study approval

This study was approved by the Department of Primary HealthCare in Malta and by the Data Protection Officer of the Department. Approval was also obtained from the Malta Foundation Programme Training Directors.

## RESULTS

### Basic demographic details

Over the one year period that this study was being carried out, 61 Foundation Year 2 doctors had a general practice rotation. Of these, 33 (54%) responded to the online questionnaire which was sent to all the doctors.

Fifty-four point five per cent of doctors who responded were females and 45.5% were males. A summary of the age/gender distribution of the FY2 doctors is reproduced in Figure 1. Most doctors had been students of the University of Malta, with only 15.2% coming from other universities.

### General Practice FY rotation

During their rotation in general practice Foundation doctors are assigned to a clinical supervisor, who is a qualified GP, and work in one of the three following regions:

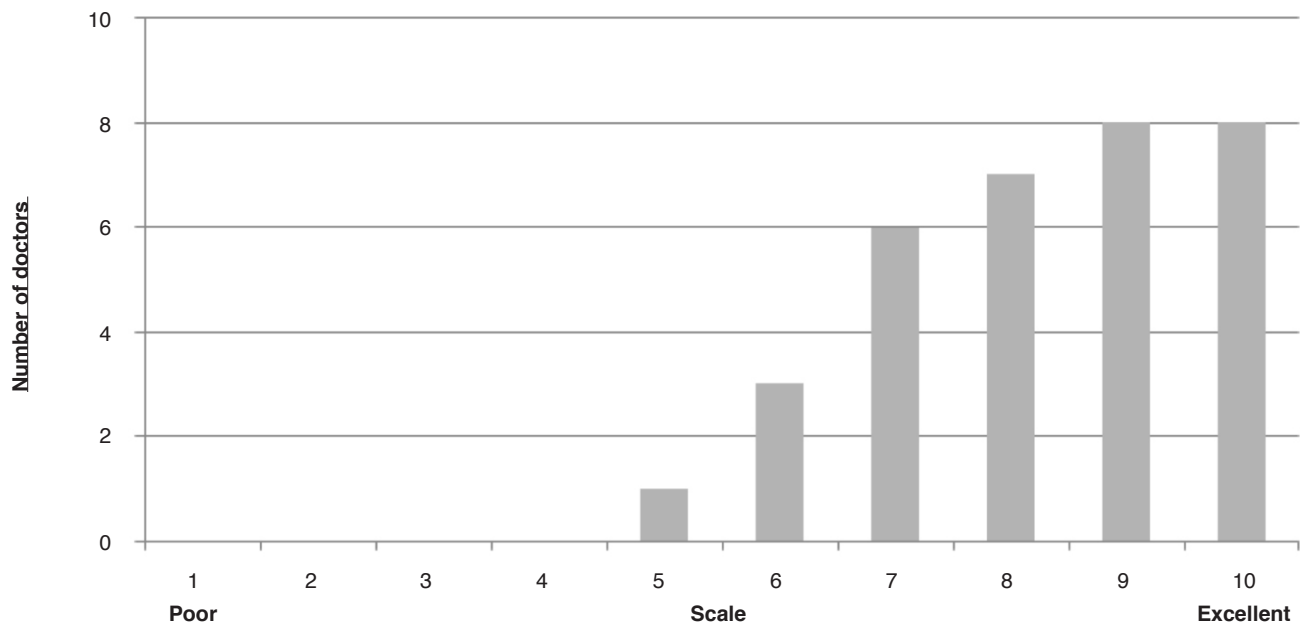
- i) North region: Mosta/Rabat/Birkirkara;
- ii) Central region: Floriana/Gzira/Qormi and
- iii) South region: Paola/Cospicua.

Figure 2 shows the percentage of responses from doctors working in the different health centre areas. Forty-five point five per cent were doctors who worked in the North region, followed by 36.4% in the Central area and 18.1% in the South.

For 72.7% of doctors, choosing a rotation in general practice was a priority and they had actually made sure that it would be one of their rotations for FY2.

When asked to rate their overall experience in general practice, a Likert score was presented with 1 signifying a 'poor' experience and 10 an 'excellent' one. A very positive rating (more than 7 out of 10) was given by 69.6% of doctors. The mean score was 8.27 out of 10. A graphic representation of the ratings in response to this question can be seen in Figure 3. There was no remarkable difference in the ratings given by doctors working in the different areas.





**Figure 3:** How would you rate your overall experience in GP

### Change in perceptions after the 3-month general practice rotation

Seventy-eight point eight per cent of doctors said that their perceptions about general practice did change after working for three months in the specialty. Thematic analysis of the ‘free-text’ responses given in reply to how the rotation changed their ideas of the specialty showed the following themes:

#### i) *Respect towards the specialty*

- “More respect to the speciality. Appreciation of limitations within the system” (FY2, South region)
- “I now have much greater respect to the field and more aware of the sort of issues a GP faces on a daily basis and the vast amount of treatment that can be delivered at a community level” (FY2, North region)

#### ii) *Awareness of the challenges faced by GPs in the community*

- “Idea that GPs are jack of all trades, master of none as peddled by most doctors working in hospital is wrong as the patient cohort are very different in both cases” (FY2, North region)
- “Diagnosis and management depends more on the clinical picture as there are less haematological and imaging investigations” (FY2, North region)
- “More awareness of the challenges and stresses of the work. More awareness of the realities of the case-mix” (FY2, Central region)

#### iii) *Confirmation or otherwise of the career choice to pursue*

- “I never thought I’d want to pursue a career as a GP” (FY2, Central region)

- “Personal realization that I do not like clinic - I prefer working in a hospital based team setting” (FY2, North region)
- “I wouldn’t have considered it before” (FY2, North region)
- “Was not exactly planning on furthering my career as a GP however after the rotation, would love to continue my career in general practice” (FY2, North region)
- “I became more certain that GP is the career I want to pursue” (FY2, Central region)

#### iv) *Variety of cases*

- “It was enjoyable dealing with patients in an outpatient setting and having new cases that needed immediate management” (FY2, North region)
- “Interesting cases were seen in addition to routine cases” (FY2, North region)
- “More variety than I expected; more interesting pathology” (FY2, North region)

#### v) *Input from seniors*

- “Great support system from most seniors” (FY2, North region)
- “I am lucky to have an excellent trainer and team” (FY2, South region)
- “Unfortunately I did not always agree with the management plan of my seniors when I asked for their advice. However on the other hand, many of the younger GPs were well-knowledged” (FY2, North region)

- “House officer is made to do all the work ... no proper induction. All this puts pressure on the junior doctor resulting in increased chance of poor patient service and quality of health care” (FY2, Central region)
- “There have been both positive and negative changes all condensed to the attitudes of the different GPs that I have worked with” (FY2, Central region)

vi) *Learning experience*

- “It was much more interesting and rewarding than I expected!” (FY2, Central region)
- “I have learnt a great deal. The work placement was far more enlightening than the experience I had as a medical student. I see patients by myself, I get involved in the treatment of acute respiratory, cardiac, traumatic and surgical cases in treatment room, I have gained an appreciation of when to refer, I have learnt how to use the ICE model of interviewing patients” (FY2, South region)

Of the 21.2% of doctors who said that the rotation did not change their ideas about general practice, the majority said that it was what they had expected it to be, with one doctor commenting that the 4<sup>th</sup> year medical student GP rotation gave a good indication of what it entails to work in General Practice.

**General practice as a career choice**

Seventy-eight point eight per cent of doctors who responded to the questionnaire said they would consider general practice as a career choice, and it was the preferred career choice for 46.2% of respondents.

Of the 72.7% of doctors for whom choosing a rotation in general practice was a priority, 88% said they would

consider a career in general practice but it was the preferred career choice for only 50% of these respondents.

There was no noteworthy difference in reply to these questions between male and female doctors.

**Factors influencing career choice**

Doctors were presented with and asked to choose from a list of factors that they feel would influence their choice of career. There was no limit to the number of factors they could choose. The three factors which were considered to have the highest influence on career choice were:

- ‘Foundation GP rotation’ (66.7%);
- ‘Inspirational teacher or role model during Foundation rotation’ (63.6%) and,
- ‘Discussion with current GP trainees’ (60.6%).

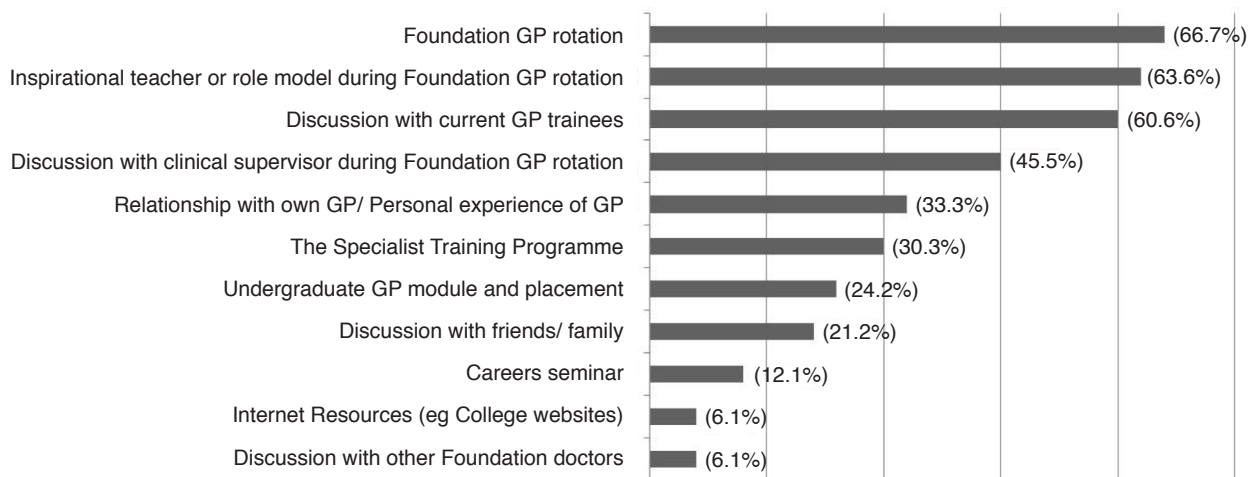
Career seminars, Internet resources (for example, College websites) and discussion with other Foundation doctors were rated to have least influence on career choice by the Foundation doctors.

Figure 4 summarizes the number of responses for each factor provided in the list.

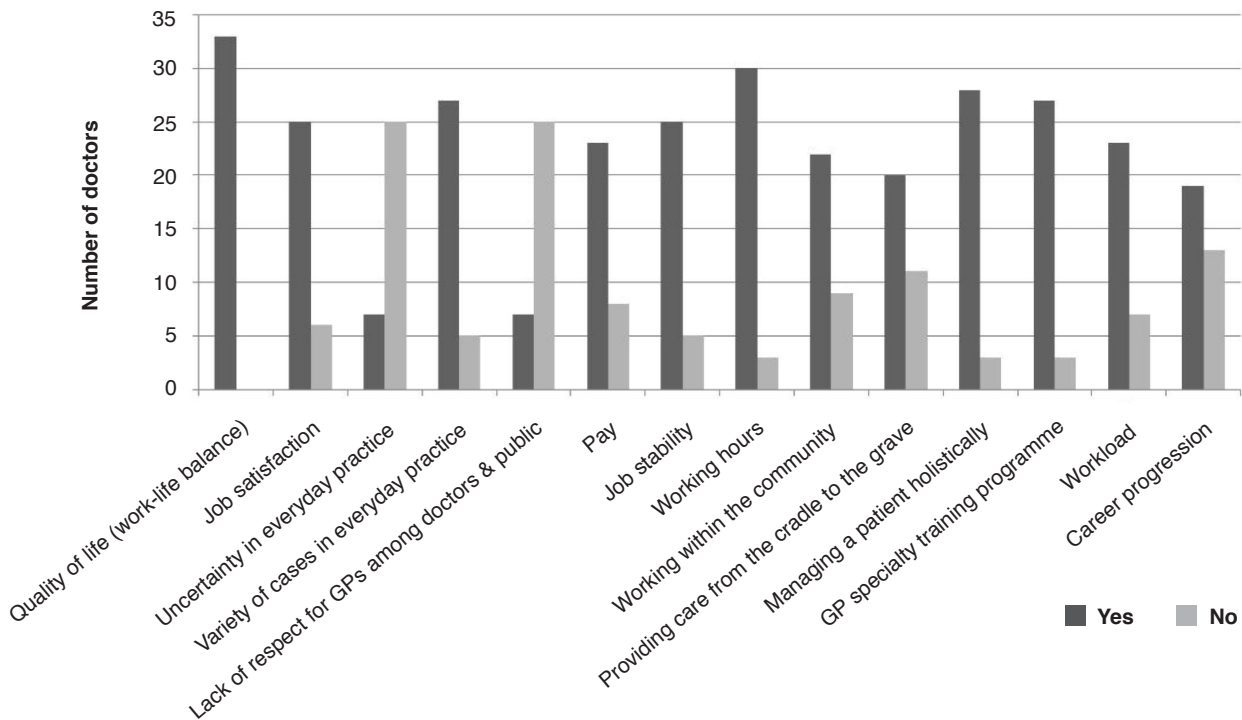
Doctors were also presented with a list of factors and asked to tick whether each factor would make them consider a career in General Practice or not.

Quality of life, chosen by all the respondents, was the most popular factor that would attract doctors to a career in General Practice. This was followed closely by working hours, the holistic management of patients, the GP specialty training programme and the variety of cases seen in everyday practice.

Lack of respect for GPs (among both doctors and the general public) and uncertainty in everyday practice were the two main factors which discouraged doctors from choosing a career in General Practice.



**Figure 4:** Factors influencing career choice



**Figure 5:** Factors attracting doctors to a career in GP

A summary of the results to this question are illustrated in Figure 5.

### Comments/Suggestions

Fifteen per cent of the respondents left a comment in the ‘free-text’ space provided at the end of the questionnaire. Two doctors mentioned the importance of the GP rotation as it gives doctors the opportunity to work independently and take autonomous decisions, while having senior help readily available if needed. Another doctor suggested that a refundable clinic fee would help ease unnecessary workload and allow GPs to focus on more important clinical and social problems. Another comment was about the importance of GPs to be role models to the general public by leading a healthy lifestyle.

## DISCUSSION

### Strengths and limitations

The questionnaire was completely anonymous, which helped to mitigate any bias or concerns of possible consequences resulting from replies given by the Foundation doctors, and was sent to all the doctors who started a GP rotation between July 2017 and July 2018. The questionnaire was sent at the end of each rotation with the aim of avoiding any recall bias. The response rate of 54% was reasonably good for such a questionnaire, as in general response rates to surveys sent to doctors tend to be lower (Cunningham et al, 2015). Possible

reasons for non-responders might include doctors who were not particularly interested in GP and therefore less inclined to reply to such a questionnaire, doctors who forgot to reply and possible issues with the email being marked as Spam. ‘Free text’ space responses allowed for clarification of certain answers, as well as other comments or suggestions, which would have otherwise been lost.

Limitations of the study include the small sample number, and the fact that the questionnaire was sent only to Foundation doctors who had a GP rotation during their second Foundation year. It would have been interesting if the questionnaire was modified and sent to all Foundation Year 2 doctors to be able to understand the difference in attitudes or perceptions of this population of doctors when compared to those who worked in general practice. The validation process of the questionnaire could have been more rigorous, and peer review could have included more than two independent reviewers. Also the questionnaire was not piloted prior to being sent out, and this might have led to errors or unclear questions which were not corrected. A possible source of bias was the fact that the authors worked at Mosta Health Centre, which could have had an effect on the high response rate in this particular area. However it should be noted that the questionnaires were sent once the rotation had ended and there was no discussion between the authors and the Foundation doctors about this study. In the questions where a list of factors was provided, no ‘other’ option was

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given and the choices were solely restricted to the ones suggested by the authors. It would have been interesting to note any factors suggested by the doctors themselves and not previously considered by the authors.

### **Comparison of results from this study with existing literature**

The majority of doctors (78.8%) who responded to the questionnaire in this study would consider a career in general practice, which is unlike a similar study in the UK which showed that only half the respondents were considering such a career (Wiener-Ogilvie, Begg and Dixon, 2015). Similarly, in this study general practice was not the first choice for 53.8% of respondents, compared to 73.5% in the UK study (Wiener-Ogilvie, Begg and Dixon, 2015). This continues to highlight the fact that general practice is a popular specialty in Malta, attracting a substantial number of trainees, when compared to the situation in the UK where there is an ongoing campaign aimed at recruiting more doctors to the specialty (NHS UK, 2018). Ensuring there are adequate numbers of doctors in general practice is a challenge for health planners worldwide. This is particularly important when faced with an ever-increasing ageing population for which primary care will play a very important role in providing medical and social care to people with multiple morbidities (Majeed, 2017).

The factors found to have the highest influence on doctors' career choice were factors related to the Foundation rotation in general practice – the actual GP rotation, inspirational role models encountered during the rotation, discussion with current GP trainees and discussion with the clinical supervisor. This was similar to the results reported in the UK study carried out in 2015 by Wiener-Ogilvie, Begg and Dixon, which also found that doctors who had completed a Foundation rotation in general practice were more likely to choose GP as a first career choice than those who did not have a rotation. This highlights the importance of the Foundation GP rotation. Therefore, healthcare professionals working in primary care should strive to make this the best experience possible for the FY doctors. GP trainees have an inspirational effect on Foundation doctors' career choice, as shown in the results of this study. This ripple effect underlines the importance of the selection of diligent, enthusiastic and motivated GP trainees who would eventually become good role models to junior doctors working in the specialty.

Not all Foundation doctors have the opportunity to work in general practice during their Foundation Year 2 and, unless the doctors ask for a taster week in the specialty, the undergraduate GP module and placement would possibly be their only exposure to general practice. In our study, only 24.2% of doctors felt that the undergraduate rotation influenced their career choice. This is in contrast to a study showing that in the UK the undergraduate GP placement had the greatest influence on doctors in favour of a career in general practice (Wiener-Ogilvie, Begg and Dixon, 2015). This might be an indication that certain changes need to be made to the local undergraduate family medicine curriculum, with the aim of making it a more valuable experience for students, in particular those for whom this placement would be the only exposure they will ever get to the specialty. The Royal College of General Practitioners recommends that more importance should be given to promoting general practice as a career during undergraduate medical training by providing students with better GP placements and encounters with inspirational GP teachers (Hawthorne and Bull, 2017). It is important that during these placements students are exposed to the complexity of the specialty, the uncertainty associated with work in general practice and the intellectual challenge it provides.

Career seminars, internet resources and discussion with other Foundation doctors were found to have the least influence on career choice, and this compares well with previous studies (Wiener-Ogilvie, Begg and Dixon, 2015).

It is a well-known fact that general practice is one of the most badmouthed medical specialties (Ajaz, et al., 2016; RCGP, 2017) and in our study this lack of respect was one of the main factors found to discourage doctors from choosing a career in general practice, which is similar to the findings in the study by Merrett et al. published in 2017.

'Quality of life' and 'working hours' were the two factors found to attract doctors the most to a career in general practice. This might be an indication that doctors who choose general practice tend to give great importance to work-life balance and believe that the specialty will give them a better quality of life compared with other hospital-based specialties (Lambert, et al., 2017; Merrett, et al., 2017). The Specialist Training Programme, which was one of the first training programmes locally, was another important influencing factor in favour of general practice as considered by the doctors in our study. The Specialist Training Programme in Family Medicine in Malta is a

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three-year programme based in family practice under the guidance of GP trainers, with additional hospital attachments in different specialties. The programme also consists of weekly formal teaching sessions, and an electronic portfolio which serves to record all educational activities and assessments, and is eventually used to assess the workplace based assessment. In addition to the latter, a clinical skills assessment and applied knowledge test take place at the end of the three-year programme (Government of Malta, 2017).

### Recommendations

The following recommendations were drawn up after this study:

- Promote general practice as a career option to medical students and Foundation doctors. This can be done by ensuring that the undergraduate family medicine programme is exposing medical students to a complete and realistic experience of the specialty, and also by creating spaces that can facilitate discussion, clarification of any issues and sharing of ideas between students/junior doctors and GP trainees/qualified GPs. These can take the format of workshops or informal meetings, which can also be an opportunity to give information about the Specialist Training Programme in Family Medicine, as well as to deal with factors that discourage doctors from considering a career in GP (for example, explaining what skills can be used to deal with the uncertainty in everyday clinical practice).
- Promote the taster week in family medicine, or organize 'A day with a GP' as an opportunity for doctors with no Foundation rotation to experience the specialty.
- Organize structured and improved induction meetings for Foundation doctors prior to starting their rotation in general practice, which is often overwhelming for doctors coming from working solely in a hospital-based environment.
- Ensure that clinical supervisors are well-trained and continue to strengthen the good support they provide during the Foundation GP placement, together with other healthcare professionals. It is also important to make sure that during their rotation doctors are well-supported, not overloaded with work, exposed to inspirational role models and get a positive and complete experience of general practice (including the challenges, rewarding experiences, home visits, teaching, and research opportunities).

- Ensure that the selection process for GP trainees is thorough, and results in the selection of diligent and motivated candidates who would eventually be good role models to junior doctors.

### CONCLUSION

General practice is a popular specialty in Malta attracting a substantial number of trainees, and the results of our study show that the Foundation rotation in general practice is a very important factor influencing career choice. This rotation was found to be a valuable learning experience, while increasing Foundation doctors' respect towards GPs and helping them understand and appreciate the variety of cases and challenges encountered by doctors in the community. Further research is needed to explore any difference in attitudes and perceptions between Foundation doctors who would have had a rotation in General Practice and those who would not have had the opportunity to work in the community. It would also be interesting to study any trends and changes in these attitudes and perceptions over the years.

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# An evaluation of the conservative management of fractures with plaster in a Maltese primary health centre

Dr Martha GRIMA and Dr Jurgen ABELA

## ABSTRACT

### Introduction

Fracture management still remains a grey area in primary care internationally. In Malta, conservative fracture management operates as the Plaster Slab Service, a service which has never been evaluated. The purpose of this study is to assess this service in Mosta Health Centre (MHC) – the only health centre with a 24/7 X-ray service. The objective is to find common trends and to increase primary care awareness on conservative fracture management.

### Method

In this cross-sectional study, all patients who had a plaster cast done at MHC between August and December 2017 were included. Retrospective data was collected including demographic data (age, gender, locality), time of application, type of injury and plaster, problems related to the slab and wound healing as well as whether a repeat X-ray was taken.

### Results

Most plaster casts were required for the younger age group with another peak in the 60s-70s age group. Younger patients showed a significantly increased risk of sustaining a scaphoid or radial fracture. There was a significant link between patients' locality and time of presentation. Only 44.6% of scaphoid fractures had a repeat X-ray done as follow up. Complications to fracture healing amounted to 1% whilst 5% had problems with the cast.

## Conclusion

At primary care level, a wide range of fractures can be successfully managed with a very low rate of complications. Possible areas for improvement include guideline adherence in the follow-up of fractures.

**Keywords:** plaster casts; primary care; bone fractures.

## INTRODUCTION

### Background

Acute musculoskeletal injuries, including fractures, are a common presentation in general practice. Multiple studies so far have shown that family doctors can manage a wide range of fractures, with healing times comparable to standard orthopaedic care (Eiff and Saultz, 1993).

Despite this, fracture management still remains a grey area for many doctors. A survey revealed that the majority of general practitioners (GPs) believed they needed more training in this area (Eiff and Saultz, 1993). Nowadays orthopaedics and fracture care are part of the general practice (GP) specialty training curriculum in Malta. Nevertheless, fracture care varies between practices and this is dependent on multiple factors including accessibility to plain radiography, specialist consultation, experience and training (Eiff and Hatch, 2012). Multiple studies have concluded that fracture outcome in family practice is positive while as stated in a 1994 study, most complications can be avoided if GPs learn to select which fractures to treat in primary care (Hatch and Rosenbaum, 1994).

In Malta, the conservative management of fractures with plaster is a service that functions within primary health care as the Plaster Slab Service. X-ray imaging is available on site in the three main government health centres (Mosta, Floriana and Paola) and plastering of fractures is offered by the nursing services of each centre. Plasters done at the health centres include a scaphoid slab, a dorsal or volar below-elbow slab and a below-knee back slab. Mosta Health Centre (MHC) is the only health centre running a 24/7 imaging service within the government premises and thus plaster application is available at any time required. Images obtained are viewed via an online software IT service which shows up the images taken instantaneously. This software is also available for viewing by radiologists and orthopaedic specialists at the sole general hospital, Mater Dei Hospital. Whenever there is uncertainty or clarification is required by a family doctor viewing the X-ray, the radiologist on call can be consulted for an official report. In addition the orthopaedic specialist on call at the hospital is also available. The latter is usually contacted for advice regarding management of fractures and future appointments at the Fresh Trauma Clinic (FTC), a clinic offered at orthopaedic outpatients in hospital.

A study conducted in MHC to assess the GP consultations showed that musculoskeletal complaints were the commonest reason for consulting (Cuschieri and Sammut, 2013). Other national and international similar studies showed musculoskeletal-related problems as one of the 5 commonest complaints to a GP (Baldacchino

et al., 2017; Cuschieri and Sammut, 2013; Soler et al., 2011). Research on the conservative management and follow up of fractures in primary care is lacking (Eiff and Saultz, 1993). Local services are readily available as described above. However, to the authors' knowledge, no evaluation of these services has yet been conducted.

### Aim

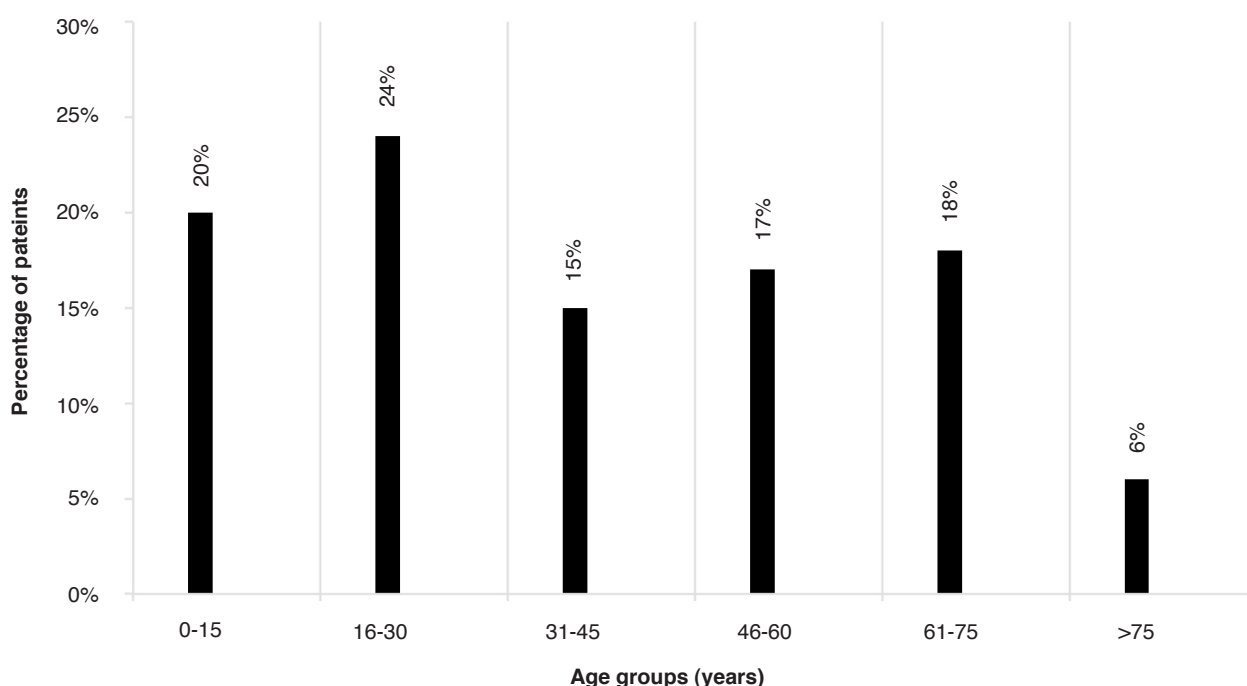
The purpose of this study was to evaluate the plaster slab service at MHC, assessing patients' demographics, the different fractures that present, plaster casts done and complications that arise from the plaster and fractures. The objective was to provide an overview of the use of these services available locally, to be able to compare to similar services in other practices. In addition, the intention was to increase awareness on the importance of managing fractures conservatively in primary care.

### METHOD

The study carried out was descriptive, retrospective and cross-sectional. All patients who had a plaster cast done at MHC between 1<sup>st</sup> August and 31<sup>st</sup> December 2017 were included in this study. This evaluation was approved by the Department of Primary HealthCare and by the Data Protection Officer of the Department.

Data input was done using Microsoft Excel and collection of data was done retrospectively using two sources:

1. The Requisition for a Plaster Slab sheet available and filled in for each patient requiring a plaster slab



**Figure 1:** Prevalence of plaster casts required across the different age groups



at MHC. Information acquired included date and time of application of plaster, type of injury/fracture, type of plaster done and problems with the slab that required re-application. From the same sheet it was also noted whether the nurse and doctor signatures were present confirming whether plaster was checked once applied. Time was divided as per doctors' working shifts to give an overview of the changes in workloads as well.

- The iSoft Clinical Manager was used to obtain demographic information on patients' age, gender and locality as well as information related to imaging such as whether a repeat X-ray was done and whether complications of wound healing arose. Age was subdivided into different age groups at 15-year intervals. This allowed specific age groups to emerge including children, young adults, adults, peri-menopausal women and the elderly.

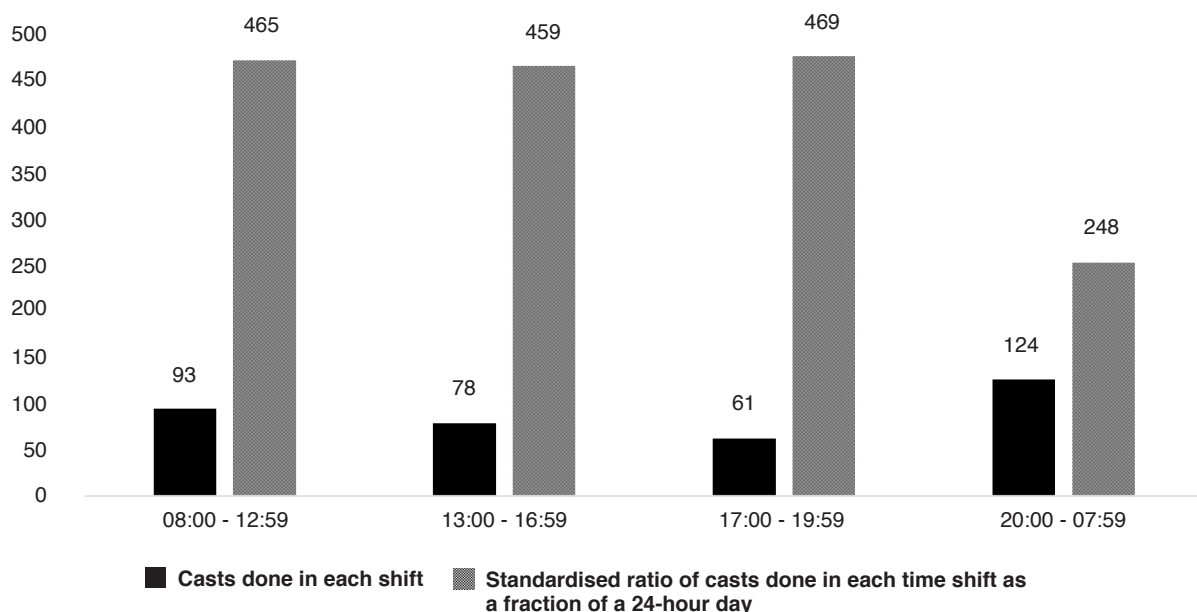
The data collected was evaluated to look for any trends. In addition data analysis was conducted using the SPSS programme version 22.0. A statistical significance was taken as equal or less than 5%. Exclusion criteria were kept to a minimum. Only those whose demographic details could not be identified on the Requisition of Plaster Slab sheet were excluded.

## RESULTS

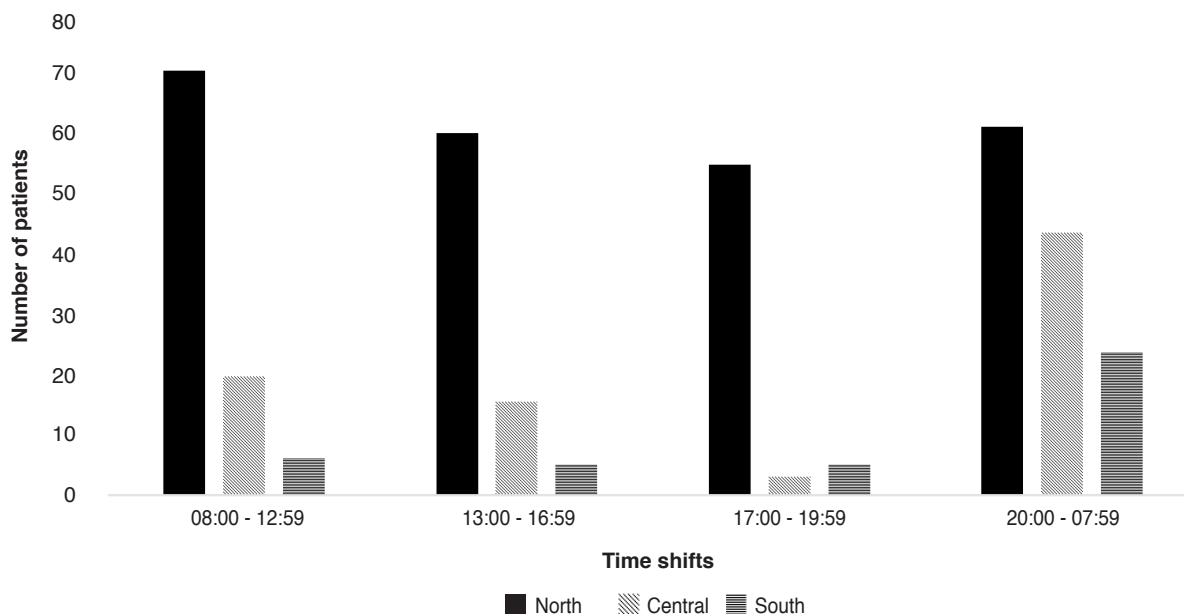
Out of 362 patients who had a plaster cast applied within the timeframe specified, 6 were excluded since their records could not be retrieved. From 356 patients,

52% were male. As shown in Figure 1, the younger age groups required the majority of plaster casts; the 16-30 years age group required 24% of the casts. Another peak occurred in the 61-75 years age group at 18%. In addition the younger age groups showed a significant greater risk of having a scaphoid or radial fracture, whilst the 31-45 years age group had a significantly increased risk of sustaining a metatarsal fracture ( $p < 0.001$ ; LR=0.000).

Month-to-month variation was not obvious. A slightly higher incidence was found in September compared to the rest of the months but this was not statistically significant ( $p=0.055$ , LR= 0.07). The highest percentage of the plaster done (35%) was during the night shift (20:00 – 07:59 hours). Although the least number of casts required was during the 17:00-19:59 hours shift, this turned out to have the highest hourly turn-up of patients requiring casts. Figure 2 demonstrates the number of casts required in each time shift as well as the standardized ratio of casts done per time shift calculated as the fraction out of a 24 hour day. This therefore gave a clearer picture of which shift had the highest hourly turn-up. Area North was the catchment area which had most patients requiring a plaster at MHC for every shift, reaching 67% of the total entries. Mosta, followed by Birkirkara and St Paul's Bay were the locations which most patients came from. As expected there was a highly significant relation between the catchment area and the time of plaster application ( $p < 0.001$ , LR=0.000) with Central and South having significantly higher turn ups during the night shift compared to the other shifts. Figure 3 depicts these results more clearly.



**Figure 2:** The standardized ratio of casts done in each time shift calculated as a fraction of a 24-hour day



**Figure 3:** Patients requiring plaster casts classified by time shifts and catchment areas (North/Central/South)

Radial and scaphoid fractures were the commonest reasons for applying plaster followed by metatarsal fractures. Twelve patients (3%) had multiple bone fractures whilst another 12 patients had no clinical or radiological fracture documented (as per data collected from the sheet and iSoft Clinical Manager). This therefore excludes cases with suspected scaphoid fractures which were not visible on X-ray. The latter were included in the scaphoid fracture group. From those classified as having multiple bone fractures, 8 had a combination of radial and ulnar fractures whilst the rest had a metatarsal fracture involved together with a fibular or tibial fracture. Table 1 demonstrates the number of patients according to fracture site.

The majority of plaster slabs were checked and signed after application. This was 95% for doctors and 94% for nurses. In this study 50% of patients had at least one repeat X-ray done in the first two months following the injury. None of those who had no suspected fracture had a repeat X-ray, except for those with a suspected scaphoid fracture. No statistical differences were found between the management of different fractures. On viewing the data collected, patients with a fracture of the radius and patients with multiple fractures were more likely to have a repeat X-ray compared to other fractures. In our evaluation 55.4% of patients with a scaphoid plaster did not have a repeat X-ray.

Figure 4 demonstrates the complications related to wound healing in those who had a repeat X-ray (n=3). Out of these 3 patients, 2 had malunion (1 after radius and 1 after metatarsal fracture) and 1 had non-union

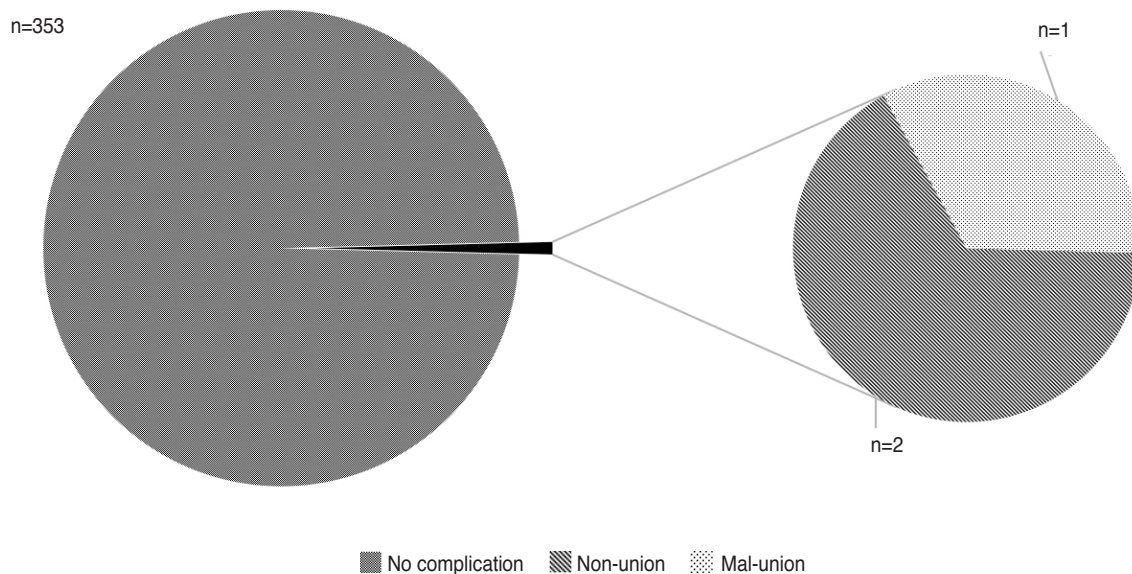
(after scaphoid fracture). Problems with the cast requiring re-application were also taken into consideration and these amounted to 5% of casts. Sixteen of these were due to broken plaster, 1 was due to circulatory problems and 1 was due to sensory problems.

## DISCUSSION

Overall there was a slightly higher prevalence of fractures in males compared to females. Although no statistical significance was found between age and gender in this

Fracture Site	No. of patients
Radius	92
Scaphoid	92
Metatarsals	68
Fibula	45
Multiple bone fractures	12
No documented fractures (clinical or radiological)	12
Metacarpals	9
Tibia	8
Other carpals (ie. apart from scaphoid)	5
Navicular	4
Phalanges	4
Ulna	4
Cuboid	1

**Table 1:** The number of patients according to fracture site (in numerical descending order)



**Figure 4:** Complications with fracture wound healing

study, on reviewing the data there was a predominance of the male gender in the younger population and a predominance of females in the elder postmenopausal age groups. This greatly coincides with what is published in previous international studies which state that fractures in general are commoner in younger males and older females at age 50+, corresponding to the peri-/postmenopausal period in females (Curtis et al., 2016). In this study, the 46-60 years age group still had a slight male predominance and this could be explained from the fact that many women might still not have reached menopause in their 40s.

The trends of fractures with age groups are comparable to the UK 2016 report on fracture management in primary care where fractures of the carpus, foot and radius/ulna were the commonest (Curtis et al., 2016). However there are also differences compared to other research abroad. In our study there was an over-representation of metatarsal fractures (19%) when compared to other literature stating that they comprise 5-6% of all fractures in primary care (Hatch, Alsobrook and Clugston, 2007). In addition metatarsal fractures were significantly commoner in the adult age group in our evaluation and this does not correspond to the literature. In fact a review article on metatarsal fractures in 2004 claimed that metatarsal fractures make 60% of paediatric foot fractures (Rammelt, Heineck and Zwiipp, 2004). Although the reason for this discrepancy is not clear, one can take into account the risk factors for metatarsal fractures, including athletics, osteoporosis, obesity and diabetes. As the latter two are

very common in the Maltese adult population, this could be one factor contributing to the results (Cuschieri et al., 2016; Buttigieg, 2005).

Radial fractures were commoner in younger males and this matches previous literature (Nellans, Kowalski and Chung, 2012). In fact the percentage of fractures in the younger age groups (26.3%) in this study matches the same percentage of 26% documented in the cited study. The statistically significant higher risk of scaphoid fracture in the younger age group has also been mentioned elsewhere (Garala, Taub and Dias, 2016) and likewise there was a male predominance in these age-groups. This evaluation also confirms that scaphoid and radial fractures are amongst the commonest encountered fractures.

Seasonal variation in fracture incidence has previously been reported with a higher frequency of fractures resulting from falls occurring during the cold seasons. In this study statistical significance was been reached and there are various reasons why these results differ. It is important to consider that the winter season in Malta is not as cold as in other northern countries and this therefore excludes one of the risk factors for falling – that of slipping on ice (Bulajic-Kopjar, 2000). In addition, only 6 months were included in this study – starting from late summer to early winter. This may introduce bias when trying to find a difference in season-to-season variation since most of the months included here were during autumn, when the weather in Malta is neither too cold nor too warm.

The highly significant relation between time and area is due to the fact that MHC is the only primary care centre

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operating with an X-ray department for 24 hrs a day and thus patients from other catchment areas are referred to this health centre in out-of-hour periods.

Complications of fractures were minimal. As described in the introduction section, previous studies have documented that fracture care at primary health is safe and has had results comparable to specialist care. Lower percentages have been described in a large study of over 5 million patients in Scotland by Mills and Simpson (2013), but this took into consideration all fractures managed – both conservatively and operatively. Therefore this would be difficult to compare to a primary care setting where this study was carried out.

Various local complications can arise from a cast, ranging from immediate complications such as skin trauma, swelling, impaired arterial supply and compartment syndrome, to delayed complications including plaster sores, neurological impairment, stiff joints, muscle wasting and breaking or softening of the cast (Szostakowski, Smitham and Khan, 2017). Although good plaster application and care of plaster are imperative, complications may still arise. In this study most plaster casts were redone due to broken plaster. There were only two cases (forming 0.006% of the population) of neurovascular complications and both were from a below knee back slab. This confirms the importance of keeping these complications in mind when applying plaster, with neurovascular compromise and compartment syndrome being commonest in the osseofascial compartments of the leg or forearm (Mar, Barrington and Mcguirk, 2008). The anterior compartment of the leg has also been mentioned as being the site where these complications happen mostly, with tibial fractures being the commonest cause (Elliott and Johnstone, 2003). In this study, both of the two cases had a metatarsal fracture. Conducting the study in a larger population might have yielded different results.

The current practice of clinical scaphoid fractures with normal radiographs in Malta involves immobilization with plaster and a review with repeat X-ray at the Fresh Trauma Clinic in two weeks. In this study only 44.6% of patients with a scaphoid plaster had a repeat X-ray and there may be several reasons accounting for these results. First of all only plain radiographs were taken into consideration in this evaluation. Recent international guidelines, such as those from the National Institute for Health and Care Excellence, have changed, with a preference towards using advanced imaging such as magnetic resonance imaging (MRI) when X-rays are normal, rather than waiting for two weeks in plaster

(NICE, 2016). MRI is available at the main hospital and privately but not at the government primary health department in Malta. Any repeat imaging with computed tomography, bone scan or magnetic resonance were not included as well as any imaging done in a private setting. In addition some patients who are then seen at the Fresh Trauma Clinic may be clinically asymptomatic at follow up, thus excluding the possibility of scaphoid fracture and warranting removal of plaster without any required further imaging.

### **Strengths and limitations**

This evaluation covers a whole 5-month period including both summer and autumn seasons, representing probably almost half of the total number of patients seen yearly. Although the population is not vast with a number of 356 patients involved, this study is a thorough appraisal of the Plaster Cast Service in MHC. Being a cross-sectional study, this allowed an assessment of the service in detail. Exclusion criteria were kept to the bare minimum. A limitation of this study is the fact that only one health centre was included. Gathering information from all health centres would have been ideal for a complete evaluation, especially with regards to complications with plaster casts and data on fractures in different areas. On the other hand, as MHC is the only health centre with imaging being provided over 24 hours, this study provides unique data which is of important consideration in Malta's primary health system. The time ranges taken in this study corresponded to the shifts of general practitioners working in primary care. This allowed a better overview of the time at which most fractures presented and other data related to them.

### **CONCLUSION**

Managing fractures conservatively has been a long process of working towards a complete approach in primary care (Eiff and Saultz, 1993). The aim of this study was reached as the service was well evaluated with promising results, confirming that family doctors are managing fractures conservatively with minimal complication rates. Adherence to guidelines is recommended for the management of various fractures which can help improve the service and gain a larger number of patients who are managed entirely in primary care. This applies both for doctors managing the fractures and examining patients after application of plaster, and for nurses applying the plaster. Good documentation on the plaster application sheet is recommended. A suggestion is made to highlight

the area in the 'Requisition for a Plaster Slab sheet' which concerns the examination of the patient after plaster application; this might be a better reminder for the staff to examine the patient and hopefully further reduce complication rates.

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# Management of hypertension in primary care

Dr Kirsten SCHEMBRI

## ABSTRACT

### Background

The European Society of Cardiology and the European Society of Hypertension define hypertension as systolic blood pressure  $\geq 140$  mmHg Hg, or diastolic blood pressure  $\geq 90$  mmHg Hg, or both. Hypertension is a challenging condition in view of it being asymptomatic, highly prevalent and requiring continuous follow-up by the family physician.

### Objective

To implement the available guidelines into clinical practice for better patient health.

### Method

Multiple databases were used to perform the literature search including PubMed, National Institute of Clinical Excellence, Scottish Intercollegiate Guidelines Network, and the Turning Research Into Practice database. The following keywords were applied: hypertension, blood pressure, and primary care.

### Results

Blood pressure needs to be measured by a device which is regularly calibrated. This could be a traditional mercury sphygmomanometer, aneroid sphygmomanometer or the automated sphygmomanometer. The cuff size should be adjusted according to the patient's arm circumference and the patient should be seated comfortably with the arm rested such that the cuff is at the same level as the heart. During the initial assessment, the blood pressure should be measured in both arms and then the arm with the highest reading is used for subsequent measurements. Ambulatory blood pressure monitoring should be offered if the blood pressure is found to be over 140/90mmHg (measured at least twice) during the initial assessment.

### Conclusion

Appropriate management of hypertension will contribute significantly towards an improvement in overall patient health.

**Key words:** hypertension, blood pressure, primary care.

## INTRODUCTION

In the latest guidelines issued by the European Society of Cardiology (ESC) and the European Society of Hypertension (ESH), hypertension is defined as office systolic blood pressure values  $\geq 140$  mmHg and/or diastolic BP (DBP) values  $\geq 90$  mmHg (Williams, et al., 2018). The incidence of hypertension increases with age and Afro-Caribbeans have a higher prevalence of hypertension as shown by various epidemiological studies (Burt, et al., 1995). Hypertension is a challenging condition since it is often asymptomatic, its prevalence is very high and requires continuous follow-up by the family physician. Hence, cardiovascular risk assessments (Franklin, et al., 2005) are very useful for primary prevention particularly in asymptomatic patients in the general population. The aim of this article is to be able to implement the available guidelines into clinical practice for better patient health.

## METHOD

The searches were performed during the month of August 2018 using multiple databases including PubMed, National Institute of Clinical Excellence (NICE), Scottish Intercollegiate Guidelines Network (SIGN), and the TRIP (Turning Research Into Practice) database. The MeSH (Medical Subject Headings) terms applied were: hypertension, blood pressure, and primary care. The following search parameters were used for the literature search:

- Scope: management of hypertension.
- Population: adults.
- Exclusions: none.

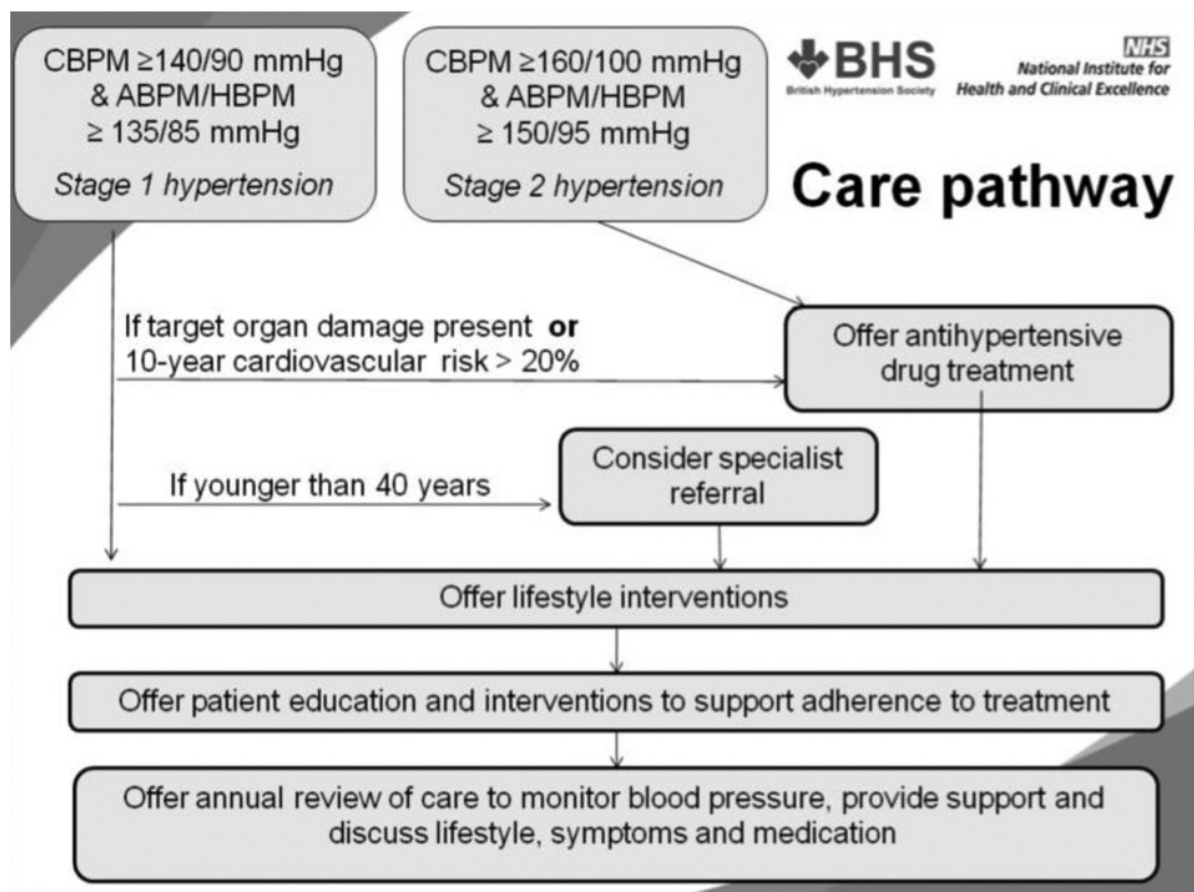
## RESULTS

Blood pressure can be measured using the traditional mercury sphygmomanometer, aneroid sphygmomanometer or the automated sphygmomanometer which is becoming increasingly popular. Guidelines issued by the British Hypertension Society (BHS) in 2017 and the National Institute for Health and Clinical Excellence in 2016 recommend that every device should be regularly calibrated. The cuff size used should be adjusted according to the patient's arm circumference. If the cuff size is too small, blood pressure may be overestimated whereas if it is too large, there may be an underestimation. The patient should be seated comfortably with the arm rested such that the cuff is at the same level as the heart. During the initial assessment, one should measure the blood pressure in both arms and then use the arm with the highest reading for subsequent measurements. A difference of up to 10 mmHg is acceptable. However, if there is a difference of 20 mm Hg or more in systolic blood pressure between the

two arms, the physician should suggest that the patient be investigated for peripheral vascular disease (Clark, 2001).

If the blood pressure is found to be over 140/90mmHg (measured at least twice) during the initial assessment, one should offer 24-hour ambulatory blood pressure monitoring (ABPM) and home blood pressure monitoring (HBPM) if ABPM is not tolerated (Figure 1). One should also consider the possibility of white-coat hypertension in patients who are noted to be anxious when a clinician is measuring their blood pressure. For such patients, ABPM or HBPM should also be considered. When the blood pressure is found to be  $\geq 180/110$  mmHg (even when repeated a second time with the patient resting for five minutes), in the absence of any signs of malignant hypertension, antihypertensive treatment should be started straight away and the patient is reviewed regularly until the blood pressure is controlled (NICE, 2016.)

The National Institute for Health and Clinical Excellence, in the latest guidelines on the clinical management of primary hypertension in adults (last updated in 2016) recommends that patients should be referred to specialist care the same day in the presence of accelerated hypertension (i.e. blood pressure usually higher than 180/110 mmHg) with papilloedema and/



**Figure 1:** Hypertension care pathway (Physicians' Academy for Cardiovascular Education, 2018)

or fundal haemorrhages and exudates on fundoscopy (signs of malignant hypertension) or signs/symptoms of pheochromocytoma such as abdominal pain, constipation, chest pain, dizziness, facial flushing and tachypnoea (NICE, 2016).

## DISCUSSION

A patient with isolated diastolic hypertension (IDH) has a blood pressure persistently over 90mmHg with a normal systolic blood pressure. Data from the Framingham Heart Study showed that patients with isolated diastolic hypertension are 23.1 times more likely to develop systolic hypertension than those with normal diastolic blood pressure. Hence, it is recommended that patients with IDH should be followed up and a cardiovascular risk assessment is carried out.

Patients with significant postural hypotension (a drop in systolic blood pressure of at least 20 mmHg when standing up from a lying or sitting position) should be considered for a routine referral to hospital. Postural hypotension is commoner in the elderly, diabetic patients and those experiencing dizziness or recurrent falls (NICE, 2016).

It is recommended by the Scottish Intercollegiate Guidelines Network that a cardiovascular risk assessment should be carried out every five years for all adults older than 40 years and for all those who have a first-degree relative who has developed cardiovascular disease when younger than 60 years of age (Franklin, et al., 2005).

Patients diagnosed with hypertension should be specifically asked regarding chest pain, shortness of breath, ankle swelling and palpitations which might suggest congestive heart failure or other complications of hypertension. Secondary hypertension should be considered in patients who are younger than 30 years, respond poorly to antihypertensives or who experience a sudden deterioration of their hypertension. Causes of secondary hypertension include diabetic nephropathy, obesity, polycystic kidney disease, renovascular pathology, Cushing syndrome, aldosteronism, pheochromocytoma, hypo/hyperthyroidism and hyperparathyroidism (Williams, et al., 2018).

When examining patients diagnosed with hypertension, one should look specifically for signs of hypertensive complications. Auscultation of the heart and lungs should be carried out looking for murmurs and basal crepitations respectively which may indicate heart failure. The location of the apex beat should be assessed since hypertension can lead to left ventricular

hypertrophy which in turn leads to a displaced apex beat. One should also assess for ankle/sacral oedema and carry out fundoscopy, looking for papilloedema or retinal haemorrhages (Williams, et al., 2018).

The following clinical investigations should be considered in patients who are diagnosed with hypertension in order to assess for complications of hypertension or for causes of secondary hypertension:

- Blood tests including renal profile, fasting blood glucose, lipid profile and thyroid function tests;
- 12-lead electrocardiogram (ECG) looking for left ventricular hypertrophy, myocardial ischaemia or arrhythmias;
- Urinalysis to test for proteinuria or haematuria as possible markers of glomerular disease (Williams, et al., 2018).

## Establishing the total risk of cardiovascular disease

It is recommended in current guidelines (SIGN, 2017) that one uses the Joint British Societies Cardiac Risk Assessor or the ASSIGN cardiovascular risk assessment tool to estimate cardiovascular risk in hypertensive patients (Williams, 2007).

## Managing hypertension in the clinic

If the blood pressure is <150/95mmHg, the patient should be counselled regarding lifestyle modifications and the blood pressure should be reviewed at least annually. Evidence from the Trials of Hypertension Prevention, phase 1 (TOHP-1), showed that a weight loss of 10kg led to an average decrease in systolic blood pressure of 5-10mmHg (He, et al., 2000). A meta-analysis carried out by Whelton et al. (2002) found that regular aerobic exercise can reduce systolic blood pressure by 3.8mmHg and diastolic blood pressure by 2.6mmHg in previously sedentary adults. Hypertensive patients (both males and females) should be advised not to exceed the limit of 14 units of alcohol per week. Findings from The Dietary Approaches to Stop Hypertension (DASH) trial demonstrate that there was a 5.5mmHg decrease in systolic blood pressure and a 3.0mmHg decrease in diastolic blood pressure when subjects were given a diet rich in fruits, vegetables and low-fat dairy products as opposed to subjects on a control diet, based on the typical American diet (Appel, et al., 1997).

For patients with a blood pressure  $\geq$ 135/85 and a 10-year cardiovascular risk of more than 20%, antihypertensive treatment should be initiated along



with lifestyle changes. Based on evidence from the Anglo-Scandinavian Cardiac Outcomes (ASCOT) trial (Sever, et al., 2003) and the NICE guidelines (2016), a four-step algorithm is used to guide clinicians when treating patients with hypertension (Figure 2). The final decision on which drug to use will depend on the individual patient's characteristics.

**Step 1:** In patients less than 55 years of age who are not of Afro-Caribbean descent, an angiotensin-converting-enzyme (ACE) inhibitor is the first-line drug of choice. This can be substituted by an angiotensin receptor blocker (ARB) in patients who do not tolerate ACE inhibitors. For all Afro-Caribbean patients and Caucasians older than 55 years, a calcium channel blocker is recommended.

**Step 2:** A calcium channel blocker should be added for Caucasians younger than 55 years of age if the blood pressure is not controlled by an ACE inhibitor or ARB alone. An ACE inhibitor (or ARB if ACE inhibitor is not tolerated) should be added in all Afro-Caribbean patients and in Caucasians older than 55 years who still have high blood pressure despite calcium channel blockers.

**Step 3:** For all patients whose blood pressure is still not controlled, a thiazide-like diuretic should be added.

**Step 4:** If the blood pressure is not controlled with three drugs, one should consider adding a non-thiazide diuretic (e.g. furosemide or spironolactone), an alpha blocker (e.g. prazosin), or a beta blocker (e.g. atenolol). The primary care physician should also consider specialist opinion or refer the patient to secondary care.

### Prescribing antihypertensive treatment

The physician should take into account the contraindications and side-effects of antihypertensive

medications before prescribing. For instance, thiazide diuretics can cause gout and are contraindicated in refractory gout. ACE inhibitors can cause renal impairment and are contraindicated in renal failure with creatinine  $>200 \mu\text{mol/l}$ , known renal artery stenosis, severe aortic stenosis and women of child-bearing age. At initiation of an ACE inhibitor or an angiotensin receptor blocker, a renal profile including Glomerular Filtration Rate (GFR) should be taken to establish a "baseline" level. The 2012 Kidney Disease Outcomes Quality Initiative (KDOQI) Clinical Practice Guidelines recommend that follow-up measurements should be carried out in around 4-12 week if the  $\text{GFR} \geq 60 \text{ mL/min/1.73 m}^2$ , change in GFR is  $<15\%$  and serum potassium  $\leq 4.5 \text{ mEq/L}$  (KDOQI, 2012).

### Evidence for early intensive treatment

In the ACCELERATE (Aliskiren and the calcium channel blocker amlodipine combination as an initial treatment strategy for hypertension control) study, subjects who were randomised to the less effective of two treatments remained at a disadvantage when compared to the dual therapy group, even though the second agent was then added later on in the study (Brown, et al., 2011). Posthoc analysis of the Systolic Hypertension in Europe trial (Thijs, et al., 2010) also demonstrated reductions in blood pressure and in cardiovascular events for initial dual therapy when compared to monotherapy. Results from a recent retrospective cohort study carried out by Xu et al, (2015) showed that delaying the intensification of treatment by more than 1.4 months after elevation of systolic blood pressure was associated with increased cardiovascular morbidity and mortality, hence emphasising the importance of timely management and follow-up of hypertensive patients.

Step	Age <55 years	Age >55 years and black people of African/Caribbean descent of any age
1	A	C
2	A + C	
3	A + C + D	
4	<b>Resistant hypertension</b> <b>A+ C +D + additional diuretic or alpha-blocker or beta-blocker</b> <b>Consider seeking specialist advice</b>	

**A** = ACE inhibitor or low cost ARB

**C** = calcium-channel blocker

**D** = thiazide-like diuretic

**Figure 2:** Four-step algorithm used to guide clinicians when treating patients with hypertension (Northern Ireland Formulary, 2015)

## Evidence against early intensive treatment

The PATHWAY-1 study was a randomised double-blind controlled trial which compared initial monotherapy with dual therapy in the management of hypertension (MacDonald, et al., 2015). At one year, the reduction in target organ damage (measured by reductions in left ventricular mass) was similar between the monotherapy and dual therapy groups.

## Patient-centred approach

An observational study carried out by Little et al. in 2001 found that patient satisfaction is higher if there is a mutually agreed plan and if patients are involved in the decision-making process. A systematic review carried out in 2012 concluded that clinicians must explore better patients' ideas and concerns on drug side-effects in order to improve adherence to treatment (Marshall, Wolfe and McKeivitt, 2012).

## CONCLUSION

Hypertension is a very important condition encountered in primary care. Appropriate management of hypertension, making use of evidence-based recommendations as outlined above, will contribute significantly towards an improvement in overall patient health.

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# Guidelines for Authors



Authors are encouraged to submit material for publication in The Journal of the Malta College of Family Doctors, provided that the work submitted is original and not submitted or intended for publication elsewhere. Suitable material includes research and review articles, study reports, case presentations, and other articles of medical interest. Articles with particular relevance to the discipline of Family Medicine will be given preference. Articles of general interest, including cultural and historic themes, may also be accepted.

The Editorial Board reserves the right to edit, style and, if necessary, to shorten material accepted for publication. Letters to the editor and comments on published articles are welcome, but should not be longer than 500 words. The Editorial Board reserves the right to edit and decide whether to accept or not any letters submitted, which decision cannot be contested.

One soft copy of the article should be submitted with a covering letter signed by the corresponding author providing consent for review and publication, declaring that the work submitted is original and not submitted or intended for publication elsewhere, and transferring of copyright to the Journal if published. The article and letter should be sent by e-mail to the address: [mcfjournal@mcf.d.org.mt](mailto:mcfjournal@mcf.d.org.mt).

Articles will be submitted for peer review, and may be returned to the author for modification if suggested by the peer reviewers. Articles must be submitted in the English language and ideally should not exceed 3000 words. Manuscripts should be typed in Microsoft Word® in the Times New Roman font and point size 12, using double-spacing and with one-inch (2.54 cm) margins. Articles which do not conform to the Guidelines for Authors will be rejected.

The article should have a separate title page with the names of the authors; their degrees, area of expertise and affiliation; the corresponding author's e-mail address (for publication) and telephone number (not for publication); acknowledgements; any competing interests and sources of support; and separate word counts for the article and the abstract.

A 250-word abstract should introduce the paper, and preferably be structured into sections as follows:

background, objective/s, method/s, results and conclusion. Up to 5 key words or phrases should be provided from the Medical Subject Headings (MeSH) available on PubMed (see: <http://www.nlm.nih.gov/mesh/authors.html>).

The main body of the paper should preferably be divided into sections according to the following order:

**Introduction:** This should provide the background to the study, together with its objective/s, research question/s or hypothesis/es.

**Method:** This should be detailed enough to allow the reader to reproduce the study. If research on human subjects is involved, approval from a research ethics committee is necessary. **Results:** After describing the study population, the result/s should be provided, making good use of tables and figures without replicating information in the text.

**Discussion:** This should arise directly from the results, and include their interpretation according to the literature, a discussion of the study's strengths and limitations, and implications for practice, education, policy or research.

**Conclusion:** This should concisely state whether the objectives have been reached, the answers to the research questions, or if the hypothesis has been proved or disproved.

**References:** These should be written using the Harvard System of Referencing (authors may wish to refer to the guide on the Anglia Ruskin University website: <http://libweb.anglia.ac.uk/referencing/harvard.htm>). References preferably should not number more than twenty.

**Tables:** These should be as few as possible (preferably not more than five). Each table should be on a separate page, numbered (e.g. Table 1) with a clear title, and must be cited in the text.

**Figures:** These should be in monochrome (not colour) and as few as possible (preferably not more than five). Each figure should be on a separate page, numbered (e.g. Figure 1) with a clear title, and must be cited in the text. It should also be submitted as a separate file (preferably in JPG format) and suitably named (e.g. 'Figure 1').