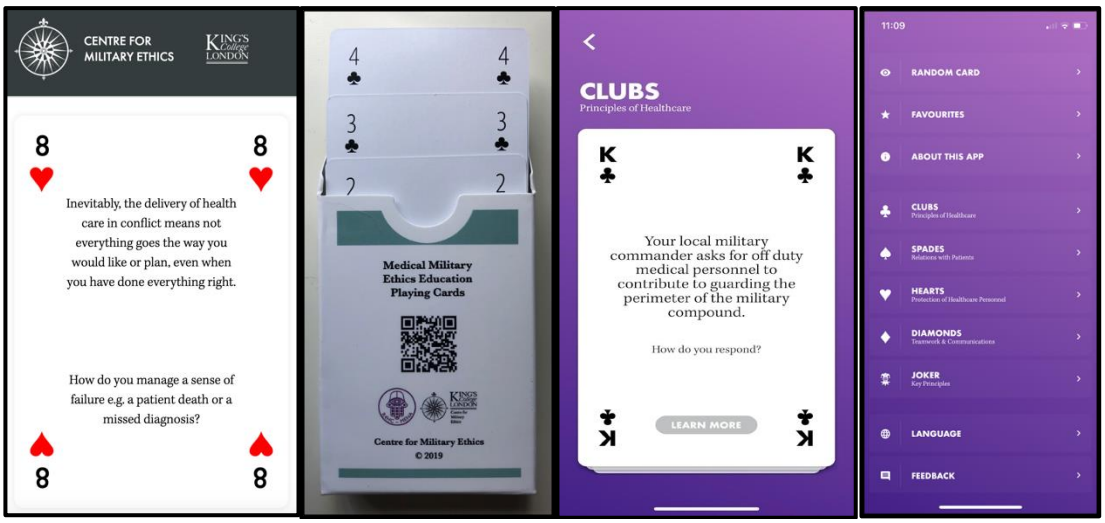


MEDICAL MILITARY ETHICS CARDS

THE CREATION AND DELIVERY OF A PEDAGOGIC TOOL FOR PRACTITIONERS – A REPORT FOR THE R4HC-MENA PROGRAMME - 07 SEPTEMBER 2020

KING'S College LONDON
Centre for Military Ethics

Table of Contents

MEDICAL MILITARY ETHICS CARDS: THE CREATION AND DELIVERY OF A PEDAGOGIC TOOL FOR PRACTITIONERS – A REPORT FOR THE R4HC-MENA PROGRAMME

Authors: Miron, M. (Research Fellow), Metwally, M. (Research Fellow), Bricknell, M. C.M. (Professorial Advisor – Ethics Education for Crisis Medicine), and Whetham, D. (Director).[1] Centre for Military Ethics, Defence Studies Department, King's College London, UK Defence Academy, Farringdon Rd, Shrivenham, Swindon SN6 8LA.

INTRODUCTION

Military Medical Ethics background

Who should be picked up by medical evacuation helicopters? Should I withdraw treatment from a child burned in a cooking accident to free up an intensive care bed for a military patient? Should I declare a soldier unfit to deploy because she refuses to take anti-malarials? Should I order a doctor to treat infectious disease patients? Should I tell the Commanding Officer of the soldier who has declared his addiction to alcohol? Should I downgrade a senior non-commissioned officer whose medical condition precludes deployment and prevent their promotion? Should I administer a vaccination that I think is unnecessary? Should I train my medics to operate crew-served machine guns?

These are just some of the types of decisions that may face a military healthcare worker that have ethical and legal implications. Ethics is the set of moral principles than govern a person's activities or behaviours. Reaching from the Hippocratic Oath, there is a long history of prescribing the ethical standards by which doctors and other healthcare professionals practice their art. Medical ethics starts with the underlying principle of 'first do no harm'. This contrasts with the 'profession of arms' whereby the explicit intent is to do harm to one's enemies. However, even in war, there should be limits to the use of violence. These are expressed as the 'laws of armed conflict (LOAC)' or 'International Humanitarian Law (IHL)'. Military ethics covers the practice of military art based on IHL and all other behaviours in employment in the armed forces. Military Medical Ethics (MME) lies at the intersection of medical and military ethics. It is underpinned by the principle that medical facilities and personnel are fundamentally humanitarian actors afforded protection under IHL. Medical personnel (encompassing all healthcare workers and personnel assigned to medical duties) are not parties to conflict and thus have rights and duties. These extend from conflict into the wider military environment and reflect the application of medical ethics into the unique context of the armed forces. As argued in an editorial by Withnall and Brockie in BMJ Military Health, there is an operational imperative that all healthcare personnel of the armed forces are taught the principles of IHL, the limitations on the use of violence and its application towards protected persons.[2] Military healthcare personnel also need specific education in military medical ethics so

[1] Contact: marina.miron@kcl.ac.uk, mohammed.metwally@kcl.ac.uk, martin.bricknell@kcl.ac.uk and david.whetham@kcl.ac.uk.

[2] Withnall, R. and Brockie, A. (2019). Military Ethics: An Operational Priority. *BMJ Military Health* 165: 219. http://dx.doi.org/10.1136/jramc-2019-001262

that they understand their duties to both their profession (medicine, nursing and allied healthcare) and their military employer – so called 'professional dual loyalty'.[3]

The Foundation Concept – Military Ethics Education Playing Cards

Raising military ethical awareness has been shown to reduce harm and suffering during an armed conflict.[4] The King's Centre for Military Ethics (KCME) created military ethics playing cards to complement its online military ethics education materials, including the introductory course *Key Concepts in Military Ethics*. The cards were developed with input from military professionals and military lawyers to offer a set of scenarios to consolidate knowledge acquired during the course and also as a stand-alone tool for prompting discussion. The fifty-two scenarios/questions offer a structure to address ethically difficult questions even if one is not a 'military ethicist'. To aid the learning process each card contains a QR Code which links to more supporting materials on the KCME website. These include additional prompts, questions and thematic readings, as well as some short videos of serving military personnel answering the questions from their own perspective. The military ethics playing cards have been used by military forces in different countries ranging from Australia and Colombia to Brunei and Oman. According to the Colombian Army military officers' feedback from the most recent survey, the cards were helpful in further exploring the topic of military ethics and strengthening the existing knowledge on the subject.[5] The cards are available at nominal cost from the King's eStore to aid training and/or prompt informal discussion and debate, normalizing the discussion of ethical challenges faced in military environments.[6]

Based on this success, funded by the R4HC-MENA project, the KCME established a complementary project in MME in 2018 focussed on the development of a pack of MME playing cards. This report describes the methodology for identifying the topics to be included and the specific questions to be considered by learners. The report also describes the next steps for the development of educational material in MME, including plans to transition the physical cards into a smartphone/tablet application.

METHODOLOGY

Aim of the Project

The aim of this specific project was to develop a set of playing cards that hosted scenarios and supporting discussions in military medical ethics to facilitate teaching and learning

[3] Olsthoorn, Peter (2019). Dual Loyalty in Military Medical Ethics: A Moral Dilemma or a Test of Integrity? *Journal of the Royal Army Medical Corps*, 165: pp. 282-282. 10.1136/jramc-2018-001131. Retrieved https://www.researchgate.net/publication/329801888_Dual_loyalty_in_military_medical_ethics_A_moral_dilemma_or_a_test_of_integrity

[4] Warner, C.H., Appenzeller, G.N., Mobbs, A., Parker, J.R., Warner, C.M., Grieger, T. & Hoge, C.W. (2010). Effectiveness of Battlefield-Ethics Training during Combat Deployment: a Programme Assessment. *Lancet*, 378: pp. 915-24. https://doi.org/10.1016/S0140-6736(11)61039-8

[5] 274 Colombian Army officers participated in the survey after completing *Key Concepts in Military Ethics* online course. King's Centre for Military Ethics & Escuela de Armas Combinadas (ESACE) (2020). ESACE Military Ethics Course [Dataset]. Colombian National Army [Distributor].

[6] The military ethics cards are available at https://estore.kcl.ac.uk/product-catalogue/academic-faculties/faculty-of-social-science-public-policy/defence-studies-department/military-ethics-education-playing-cards.

in military medical ethics. The project had the following distinct phases: literature review, collation of practitioner perspectives, topic selection and question formulation, development of supporting material, field testing. Although the project was titled 'military medical ethics', the subject is also highly relevant for humanitarian actors who operate in conflict zones as well as military medical personnel. It was intended that the scenarios selected for the cards would be suitable for both military and humanitarian healthcare workers to prepare them for possible ethical dilemmas in the field and also facilitate discussions about ethical decision-making, especially covering time sensitive situations, between civil and military learners. Due to the specific focus of R4HC-MENA who were providing the research funding for the project, the intention from the start was to create an English and Arabic version of the final product. It was also decided that the scenarios and reference material would be internationalised to minimise policies and practice that were unique to only a particular nation or conflict.

Literature Review

The first phase of the project was a literature review for both open-source information (documents containing ethical guidelines on international and national levels) as well as academic literature. The search was performed using Google.co.uk and Google.com search engines. Specialist sources such as the websites and published materials of the International Committee of the Red Cross (ICRC), the International Committee of Military Medicine (ICMM) and the World Medical Association (WMA) were specifically reviewed to provide context. All information was selected and evaluated manually, focusing explicitly on those guidelines and documents applicable to military and civilian humanitarian contexts. This provided us with the primary reference sources to support the analysis and discussion of the scenarios in the cards for our learners. It also facilitated the interpretation of the practitioners' perspectives described in the next section.

Collation of Practitioner Perspectives – Interviews and Focus Groups

Interviewees

During the second phase, anonymised interviews were conducted with healthcare workers familiar with crisis medical situations. The selection of the interviewees followed the *open sampling* process,[7] deliberately selecting a wide range of participants who have faced military medical ethical dilemmas in conflict and crisis situations. The roles and experience of interviewees ranged from nurses and surgeons through to humanitarian assistance coordinators and managers. These included individual UK and international military medical personnel, personnel from INGOs, UNHRC, IRC, WHO, ICRC, MSF and medical personnel from the Jordanian Armed Forces, plus Jordanian-based NGOs (Harmony – focus on women and children plus long-term integration; Jordan River Foundation – more crisis-focussed and includes gender-based violence). The Jordanian Paramedic Society provided valuable perspectives on providing emergency assistance in various contexts. The researchers also interviewed staff (nursing staff and doctors, psycho-social team and pharmacists, plus senior physicians) at King Hussein Cancer

[7] Strauss, A. J. and Corbin, J. (1990). *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. Newbury Park, CA: Sage; Draucker, C., Martsolf, D., Ross, R., & Rusk, T. (2007). Theoretical Sampling and Category Development in Grounded Theory. Qualitative Health Research, 17(8), 1137-1148.

Center in Amman, Jordan, to gain an understanding of palliative care issues and broader insights into cultural differences that affect practitioner/patient/public interactions and relationships.

Interview Aims

The overarching aim of conducting interviews was to examine the practitioner perspectives on the topic of military medical ethics. This aim can be subdivided into the following points:

- To learn practitioner perspectives on the research subject
- To distil consistent issues/topics of concern from interviews
- To distil questions for stimulating thought/discussion about the specific issues
- To find a framework for grouping topics/questions
- To find guidelines and official advice for addressing the questions
- To draw on interview transcripts to add anonymised case studies and examples of practical solutions that address gaps in official guidance and for illustrating questions and provoking additional discussions that go beyond the basic questions.

Interviewing process

The anonymised semi-structured interviews[8] were conducted both in person and via electronic means (e-mail). The interviews were conducted in English in 2017 and 2018 in London, U.K and in Amman, Jordan. Prior to conducting interviews an ethical approval was obtained (KCL Research Ethics Approval MRA-17/18-7418). All participants were informed about the subject and the purpose of the interviews, and were provided with an identical list of indicative questions prior to the interviews to enable the participants to familiarise themselves with the topic. Based on the experience of the people involved, the semi-structured interviews began with the following questions:

- RQ1: People who were about to deploy – "from an ethical perspective, what would you like to know?"
- RQ2: People who were currently working in refugee camps or in emergency medicine related to humanitarian situations – "what ethical issues are you currently being faced with?"
- RQ3: People who had recently returned from deployment – "in ethical terms, what do you wish you had known about before you deployed?"

For any ethical issues that were identified, the researchers asked the interviewees to grade the importance of the issues relative to other concerns using the Likert Scale from 1-5, where 5 corresponded to 'extremely important' and 1 to 'not important at all'.

Theme Selection and Question Formulation

Before commencing with formulations of preliminary questions for the playing cards, the researchers grouped the information obtained from the qualitative assessments of the

[8] Galletta, A., & Cross, William E. (2013). *Mastering the Semi-Structured Interview and Beyond from Research Design to Analysis and Publication* (Qualitative Studies in Psychology). New York: NYU Press, pp. 75.

interview transcripts (RQ1 to RQ3). This was done in part to establish if it was possible to organise the questions that would be derived from them into four coherent groups so that they can be used with the familiar and non-threatening playing card format. While this preferred format would still work with randomised questions across the four card suits, for pedagogical reasons in terms of training preparation and ease of use, it was preferable to be able to easily identify and select questions that could be seen to be related in some way. The interview transcripts were assessed manually whereby each researcher evaluated their own transcripts. The evaluation process was qualitative and followed *open, axial and selective coding* methods.[9] Firstly, the interview transcripts were read several times to identify and label/code segments of data that describe the contents of each segment (such as 'bribery') that had caused specific challenges for medical practitioners. Secondly, the researchers, using the codes, established relationships between these codes to see how the questions might be grouped together naturally into related topic areas. Thirdly, based on the results from axial coding (previous step), the researchers identified the core themes/groupings, that relate to the entire data. Through this process, a number of specific themes emerged.

Theme Selection Evaluation

In order to evaluate the relative importance of the emerging themes, and validate that the appropriate ones had been identified, the researchers created a quantitative survey for selected field experts (military medics and humanitarian experts) from the UK, Egypt and Jordan. The experts were asked to assess on a Likert Scale from 1 to 5 (where 5 is equivalent to strong agreement) to which degree 'the issue or scenario [was] real and likely to be faced by military medical personnel'. The experts were also invited to make comments at the end of the survey if they believed there was a substantive omission in the scope of the themes presented. The outcome of the survey results is displayed in *Table 1* below.

[9] Strauss, A.J. (1987). *Qualitative Analysis for Social Scientists*. New York: Cambridge University Press. https://doi.org/10.1017/CBO9780511557842, pp. 51-85.

ID	Q1 – General Medical Ethics	Q2 – Relations with Patients	Q3 – Protection of Healthcare Personnel	Q4 – Teamwork and Communications	Q5 - Compatibility with Local Culture	Q6 - Humanitarian Forensic Medicine	Q7 - Vulnerable Groups' Care	Q8 - Mental Health of Patients	Q9 - Triage and Allocation of Scarce Resources	Q10 - Palliative Care
1	5	5	5	5	5	5	4	5	5	4
2	5	4	4	5	4	4	4	4	5	4
3	5	5	5	5	5	4	5	5	5	5
4	5	5	3	5	4	2	3	4	5	4
5	5	5	5	5	4	3	4	5	4	4
6	5	4	3	4	3	2	4	4	2	2
7	5	5	4	4	5	5	5	5	5	5
8	4	5	5	5	5	5	4	5	5	4
9	5	5	5	5	5	5	5	5	5	5
10	5	5	5	5	4	4	4	4	5	4
11	5	4	5	5	4	3	4	4	5	3
12	5	4	4	3	4	5	4	5	5	5
13	5	5	5	5	5	5	5	5	5	5
Mean	4.9	4.4	4.4	4.6	4.3	4	4.2	4.6	4.6	4.1

Table 1 – Results of Expert Evaluation Survey

Using the mean, researchers rank-ordered these themes according to perceived relevance:

1. 'General Medical Ethics' (4.9)
2. 'Teamwork & Communications' (4.6), 'Triage and Allocation of Scarce Resources' (4.6) and 'Mental Health of Patients' (4.6)
3. 'Relations with Patients' (4.4) & 'Protection of Healthcare Personnel' (4.4)
4. 'Compatibility with Local Culture' (4.3)
5. 'Vulnerable Group's Care' (4.2)
6. 'Palliative Care' (4.1)
7. 'Humanitarian Forensic Medicine' (4)

These results were important when selecting the main categories for playing cards' suits (see below) and the relative number of questions that were allocated to each theme.

To populate the cards, 52 questions were either extracted directly from the interview transcripts or formulated based on the issues raised, whereby some of the questions would address several subject areas simultaneously.

Allocation of Questions to Cards and Creation of Suits

After creating a preliminary list of 52 questions, they were subdivided into four broad categories. Several iterations of these categories were proposed, but it was found that using the three categories from the *Ethical Principles of Healthcare in Times of Conflict*,[10] was both an efficient way of covering the themes that had emerged from the interviews, and also provided additional validation through representing the collective opinion of the World Medical Association (WMA), International Committee of Military Medicine (ICMM), International Council of Nurses (ICN), International Pharmaceutical Federation (FIP), International Committee of Red Cross (ICRC) on medical ethical principles in times of armed conflict and emergencies.

The remaining issues and challenges were all related to communications, teamwork or cultural challenges. These were recurring themes and were repeated in various ways and manifestations from across the interviewees regardless of military or civilian background and irrespective of nationality. They were mentioned in the broader literature search in stage I and reflects the importance of teamwork and communication in preventing medical errors that could potentially result in permanent harm to a patient or patient death. 'Teamwork and Communication' was also considered as an 'important' subject area by the experts who took part in the validation survey (see *Table 2*).

The categories were selected as follows:

1) General Principles (Clubs) (points 1-5)
2) Relations with Patients (Spades) (points 6-9)
3) Protection of Health-Care Personnel (Hearts) (points 10-13)
4) Teamwork and Communications in the Delivery of Safe Patient Outcomes (Diamonds)

Suits	**Principles**
Clubs (General Principles)	1. Ethical principles of health care do not change in times of armed conflict and other emergencies and are the same as the ethical principles of health care in times of peace. 2. Health-care personnel shall at all times act in accordance with relevant international and national law, ethical principles of health care and their conscience. In providing the best available care, they shall take into consideration the equitable use of resources. 3. The primary task of health-care personnel is to preserve human physical and mental health and to alleviate suffering. They shall provide the necessary care with humanity, while respecting the dignity of the person concerned, with no discrimination of any kind, whether in times of peace or of armed conflict or other emergencies. 4. Privileges and facilities afforded to health-care personnel in times of armed conflict and other emergencies are never to be used for purposes other than for health-care needs. No matter what arguments may be put forward, health-care personnel never accept acts of torture or any other form of cruel, inhuman or degrading treatment under any circumstances, including armed conflict or other emergencies. They must never be present at and may never take part in such acts. 5. No matter what arguments may be put forward, health-care personnel never accept acts of torture or any other form of cruel, inhuman or

[10] International Committee of the Red Cross (ICRC) et al. (2015). *Ethical Principles of Health Care in Times of Armed Conflict and Other Emergencies*. Geneva: ICRC.

Suits	Principles
	degrading treatment under any circumstances, including armed conflict or other emergencies. They must never be present at and may never take part in such acts. (ICRC et al., 2015, points 1-5)
Spades (Relations with patients)	6. Health-care personnel act in the best interest of their patients and whenever possible with their explicit consent. If, in performing their professional duties, they have conflicting loyalties, their primary obligation, in terms of their ethical principles, is to their patients. 7. In armed conflict or other emergencies, health-care personnel are required to render immediate attention and requisite care to the best of their ability. No distinction is made between patients, except in respect of decisions based upon clinical need and available resources. 8. Health-care personnel respect patients' right to confidentiality. It is ethical for health-care personnel to disclose confidential information only with the patient's consent or when there is a real and imminent threat of harm to the patient or to others. 9. Health-care personnel make their best efforts to ensure respect for the privacy of the wounded, sick and deceased, including avoiding the use of health care for the wounded and sick, whether civilian or military, for publicity or political purposes. (ICRC et al., 2015, points 6-9)
Hearts (Protection of Health-care Personnel)	10. Health-care personnel, as well as health-care facilities and medical transports, whether military or civilian, must be respected by all. They are protected while performing their duties and the safest possible working environment shall be provided to them. 11. Safe access by health-care personnel to patients, health-care facilities and equipment shall not be unduly impeded, nor shall patients' access to health-care facilities and health-care personnel be unduly impeded. 12. In fulfilling their duties and where they have the legal right, health-care personnel are identified by internationally recognized symbols such as the Red Cross, Red Crescent or Red Crystal as a visible manifestation of their protection under applicable international law. 13. Health-care personnel shall never be punished for executing their duties in compliance with legal and ethical norms. (ICRC et al., 2015, points 10-13).
Diamonds (Teamwork, Culture and Communications)	Recognising this as a specific category emphasises that modern healthcare is delivered by multidisciplinary, distributed healthcare teams rather than individuals. 21st century healthcare is much more dependent on the communication and relationships between different members of a team and between teams. Changes in healthcare delivery have not been supported by changes in the systems for communication between health professionals, especially across disciplines.[11]

Table 2 Allocation of specific principles to the suit

[11] Weller J., Boyd M., and Cumin D. (2014). Teams, Tribes and Patient Safety: Overcoming Barriers to Effective Teamwork in Healthcare. *Postgraduate Medical Journal* 90, pp. 149-154; Baker, D. P., Salas, E., Barach, P., Battles, J., & Kin, H. (2007). The Relation between Teamwork and Patient Safety. In P. Carayon (Ed.), *Handbook of Human Factors and Ergonomics in Health Care and Patient Safety* (pp. 259-271). Mahwah, NJ: Erlbaum; Salas, E. & Frush, K. (eds.). (2012). Improving patient safety through teamwork and team training. New York: OUP; Iedema, R., Greenhalgh, T., Russell, J., et al (2019). Spoken Communication and Patient Safety: A New Direction for Healthcare Communication Policy, Research, Education and Practice? *BMJ Open Quality*, 8:e000742. DOI:10.1136/bmjoq-2019-000742; O'Daniel, M. & Rosenstein, A.H. (2008). Professional Communication and Team Collaboration. In: R. G. Hughes (ed). *Patient Safety and Quality: An Evidence-Based Handbook for Nurses*. Rockville (MD): Agency for Healthcare Research and Quality. Retrieved from: https://www.ncbi.nlm.nih.gov/books/NBK2637/.

Development of Supporting Material

Following the methodology already established by the non-medical version of the cards, there is a QR-code link to additional material to support analysis of the scenario from each card to a website. Initially this material was developed independently by our collaborators for each card. However, after early reviews by KCME researchers, a common structure for each scenario/question was created as follows:

- Scenario/Question
- Specific topic
- Key references
- Discussion
  - Review of the question;
  - Interpretation of the principles/policy from the references;
  - Framework for answering the scenario/question;
- Further issues for consideration
- Further reading

Translation

Once the questions and supporting material had been formulated and validated, the material was translated into Arabic. To ensure that the technical language and 'flavour' of the issues was preserved in the translation process, the specialist translation was completed by an Egyptian national with an English language PhD in medical ethics (MM). In a methodology that had been demonstrated as effective in the non-medical version of the cards, the translation of each question was tested with Arabic-speaking medics.

Implementation and Further Validation

Currently, the cards are available in their physical and digital formats (see *Figure 1* and http://militaryethics.uk/en/playing-cards/medical). The printed version has been provided to a number of military educators and institutions for use with a request for feedback as appropriate. The cards have been used for two specific educational activities, consisting of both military and civilian personnel from different regions in the world. They have also been used by military medics informally.

Figure 1 Digital and Printed Playing Cards in English

The first instance of implementation was during the 7th International Committee on Military Medicine (ICMM) Course on *Military Medical Ethics in Times of Armed Conflict* (MME), Spiez, in September 2019. The cards were used during a 5-day course on ethical decision-making in the military medical context, with participants being from different world regions with different ranks. During the course, a model of ethical decision-making was introduced. On day 3, each participant received a deck of cards with an explanation about the product and a request to review them. The participant reception of this initiative was positive (based on their verbal expressions). On day 5, the cards were used in a classroom setting as a basis for stimulating discussion. Each participant had to pick one card with a topic they liked and another card with a topic they did not find interesting. The result of this exercise generated the desired small group discussions. Participant exchanged their experiences from their respective deployments and discussed ethical issues. Sometimes participants even made cross-references to other cards. This classroom discussion required only minimal external input.

The second iteration of the use of the cards took place during a seminar on Ethics in Crisis as part of the pilot Comprehensive Medical Support in Complex Emergencies course taught in the United Nations Peacekeeping Training Centre, Accra, Ghana in November, 2019. MB used the playing cards during a two-hour teaching session (see *Figure 2*). The audience consisted of 23 participants: 13 civilians and 10 military personnel with a mixed Western (5) and African (18) origin. The session comprised a 40-minute presentation that summarised military medical ethics and the laws of armed conflict. This was followed by small group discussions using randomly selected scenarios from the pack of cards. The assessment of the session was conducted using a 5-point Likert Scale. The majority (17) found the session excellent; four participants rated it as ‘good’ and one selected the option ‘undecided’. The cards were considered to be a valuable teaching aid.

Figure 2 U.N. Peacekeeping Training Centre, Accra, Ghana, November, 2019

In both cases the cards were described as helpful by both the learners and the educators. They helped to prompt spontaneous discussions with minimal input of the educator, thereby helping to apply and reinforce the acquired knowledge during the said events as well as to find parallels to similar ethically challenging scenarios from the learners' experiences.

As part of the less structured, informal validation, qualitative feedback was also received from many of the original interviewees and an expanded number of practitioner reviewers. These reviewers were based in the UK, Jordan and Egypt. This was very helpful, particularly in terms of further ensuring that the Arabic translation and the questions themselves were culturally appropriate.

A Look Ahead

Based on positive feedback from users of the cards, the researchers are now developing a smartphone app that can be downloaded to learner's phones to support both small group teaching and their own self-study. The app may also replace the use of physical playing cards. The educational theory that underpinned the approach for the use of the app is at appendix 1 with the detailed design of the app is at appendix 2. Figure 3 shows a screen shot of a playing card from the app. The researchers will also develop additional educational packages based on the topics covered by the cards in order to complement the existing teaching 'aids', the cards and the app. Once the English version of the new content is finalised, this will be translated into Arabic, as well as Spanish and other languages to cater to a wider audience. It is intended that the MME cards will also provide a link to additional material to support discussion and individual learning from each scenario based on the information obtained from the interviews, literature research as well as the scenario database provided by our partners at the Centre for Military Medical Ethics (CMME) at the University of Zürich and by Professor Heather Draper, Warwick Medical School.

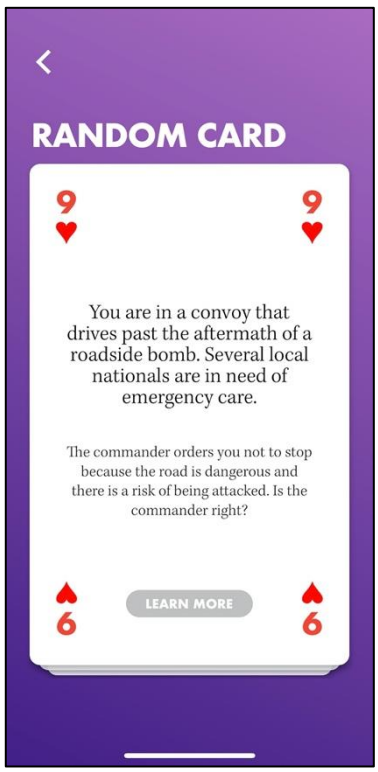


Figure 3 Mobile Application

The app itself will see further improvements in order to convert it from a deck of cards into a self-study guide. Thus, its functionality and features will be expanded to better complement the teaching materials. The integration of *e*Learning and *m*Learning will provide both the educators and users with a more complete package which can be used both inside and outside the classroom. Additionally, the app will be designed in such a way that its users will not require any connection to the Internet to be able to benefit from its features. This will be especially important during deployments and in areas with low or no internet coverage.

As the project continues, the KCME researchers will be refining the questions and scenarios by relying more on quantitative data from the surveys. While the educational case studies described above provide positive feedback related to the utility of the cards during small group teaching, there needs to be more testing done on a larger scale in order to make the material more generalisable as well as to increase the external validity of the tool (with possible amendments). To remedy this methodological weakness, researchers have developed two types of surveys for educators and learners in order to evaluate the current content and utility of the cards that can be accessed directly from the app. In addition, the mobile application contains a feedback field which enables the app users to share their opinion and/or report issues should they decide not to take the surveys. Once all data is gathered and analysed, the cards and the app will undergo an evaluation process, specifically focusing on both the utility of cards (ease of use, readability and phraseology of card questions and similar) and the questions assigned to each card as well as the supporting material (case studies and additional discussion). This will be first done for the English version of the cards. Where applicable, questions were refined or replaced, and new supporting material was added in order to complement questions that appear on the cards. Finally, the researchers will develop a teacher/facilitator guide which will describe how the complete MME package can be used in different way, providing a variety of pedagogical methods for the optimal teaching/learning experience.

Summary

Scenario based education is useful to develop attitudes and behaviours in ethics. This has been effective in teaching military ethics to a large variety of military audiences. This report describes the development of a website and playing cards as an educational tool to support scenario-based learning in military medical ethics based on the previous experience of King's Centre for Military Ethics in the use of playing cards in this manner for teaching military ethics. The report also describes the plan to develop a smartphone app to combine the attributes of the website and app into a resource for small group teaching and self-directed learning. It is intended to develop the method to evaluate the use of these cards in different educational settings in order to measure the educational impact of this innovation.

ACKNOWLEDGEMENTS

- Dr Daniel Messelken, Zürich Centre for Military Medical Ethics, University of Zürich, Switzerland
- Prof Heather Draper, Warwick Medical School, Department of Social Science and Systems in Health, Warwick University, UK
- All Interviewees and Collaborators.

Appendix 1 - Pedagogical Underpinnings

The military medical ethics playing cards were designed to be used either a supplement to eLearning or as a stand-alone learning tool. While eLearning offered by the KCME aims to target the lower domains of Bloom's taxonomy[12] – *knowledge* and *comprehension* – the cards aim at helping students hone the skills located in the upper domains, namely, *application* and *analysis* (see *Figure 2*).

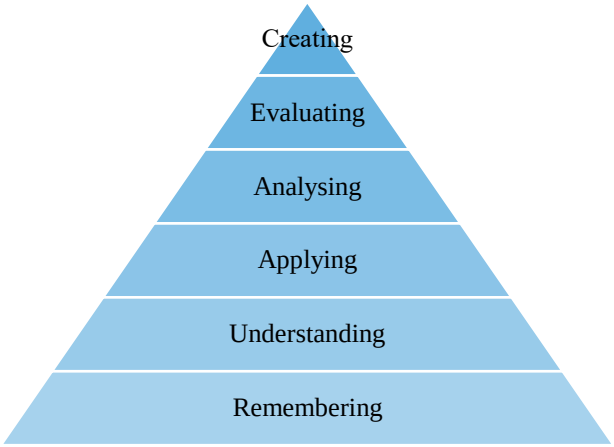


Figure 1 Bloom's Taxonomy

The physical version of the cards is a key element in strengthening the face-to-face/classroom element of the blending learning approach[13] used by the KCME. This fact is supported by statistical data obtained by the KCME.[14]

Given the crucial role that playing cards play in the blended learning approach, the KCME has developed a beta-version of a mobile application to resemble the physical playing cards. The app is being designed to *augment* the already existing eLearning offerings available at https://militaryethics.uk/en/course.[15] Unlike its physical counterparts, the app provides its users with mobility while offering the same learning benefits described above without requiring any network coverage once installed. Mobility is especially important given that the target audience will most likely be located in conflict zones where the use of physical cards might not be possible or is altogether prohibited (such as in the MENA region).

---

[12] Bloom, B.S., Mesia, B. and Krathwohl, D.R. (1964). *Taxonomy of Educational Objectives* (2 vols: The Affective Domain & The Cognitive Domain). New York: David McKay Co Inc.; Krathwohl, D.R. (2002). A Revision of Bloom's Taxonomy: An Overview. *Theory into Practice*, *41*(4): 212-218. DOI: 10.1207/s15430421tip4104_2

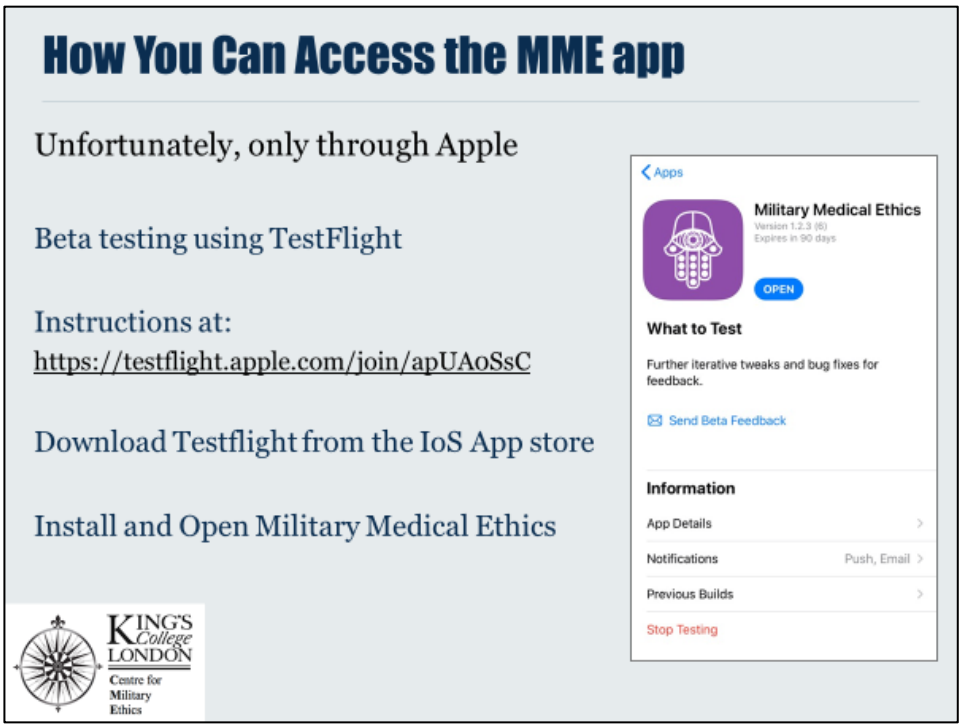
[13] Bonk, C. J. and Graham, C. R. (2012). *Blended Learning: Global Perspectives, Local Design*. San Francisco, CA: Pfeiffer, pp. 3-19.

[14] 274 Colombian Army officers participated in the survey after completing *Key Concepts in Military Ethics* online course. Centre for Military Ethics & Escuela de Armas Combinadas (2020). ESACE Military Ethics Course [Dataset]. Colombian National Army [Distributor].

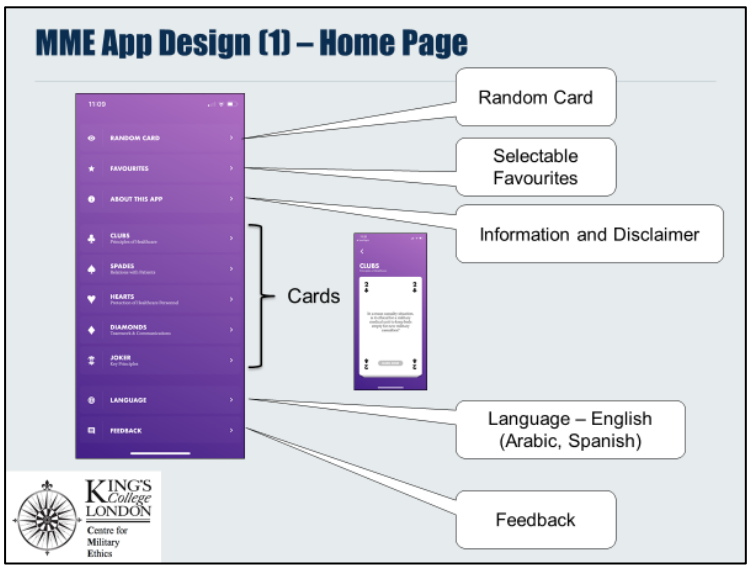
[15] For the purpose of this methodology, mLearning is considered to be a subset of eLearning. See, for instance, Low, L. and O'Connell, M. (2006). Learner-centric Design of Digital Mobile Learning. In: Proceedings of the OLT Conference, pp. 71-82; Peters, K. (2007). M-Learning: Positioning Educartors for a Mobile, Connected Future. *International Journal of Research in Open and Distance Learning*, *8*(2), pp. 1-17.

Appendix 2 - Smartphone App

The MME Beta App is available to download using a beta-testing application for iOS devices – *TestFlight*. The slide below explains how to do this: (open this link in Safari on an Apple device): https://testflight.apple.com/join/apUA0SsC)

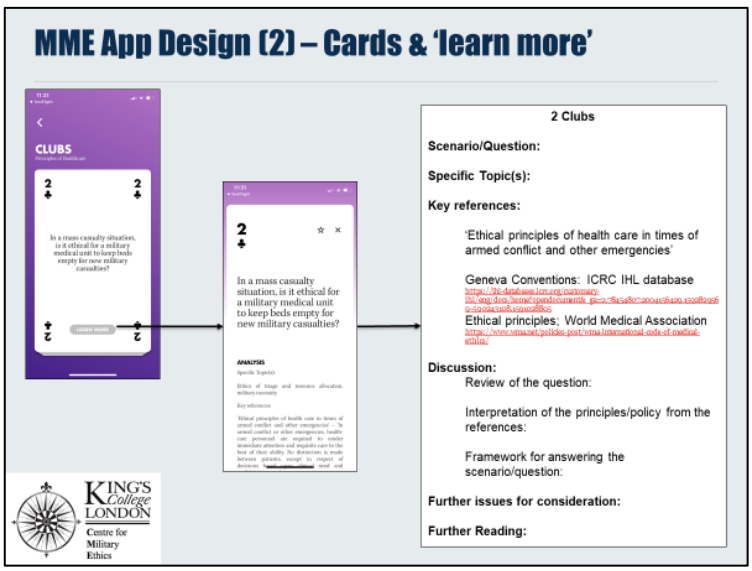


The landing page for the App looks like:



There is a 'random card' button that provides 4 new random cards each time it is opened. This can be used to provide variety to the learner. The 'favourites' button enables the user to select favourite cards for teaching. The 'about this app' button provides a summary to the development of the App and the disclaimer. There are 4 suits: Clubs – principles of healthcare, Spades – relations with patients, Hearts – protection of healthcare personnel

and Diamonds – teamwork, communication and culture. The design of the cards is explained below. The cards are currently in English, with Arabic translation for some of the scenarios. It is intended to translate the final content into Arabic and Spanish. The feedback section will be explained later.



Each card provides a question/scenario for use as individual reflection or small group discussion. At the bottom of each there is button to a 'learn more' page. It is intended that all of the 'learn more' pages will follow a similar structure as shown on the slide.
For Clubs – principles of healthcare, Spades – relations with patients, Hearts – protection of healthcare personnel, there are 3 core reference sources: the joint statement of World Medical Association (WMA), the International Committee of Military Medicine (ICMM), the International Council of Nurses (ICN) and the International Pharmaceutical Federation (FIP) 'Ethical Principles Of Health Care In Times Of Armed Conflict And Other Emergencies', an appropriate rule from the ICRC Customary IHL Database (at: https://www.icrc.org/en/war-and-law), and a statement from the World Medical Association International Code of Medical Ethics. These form the basis for the discussion of the question. Finally, there are some additional topics for consideration and some reference sources.
For Diamonds – teamwork, communication and culture there is a single 'learn more' discussion that covers the whole topic. There are two Jokers: one has the 4 principles of Medical Ethics, the other has a summary of the Geneva Convention – they link to a single 'learn more' page that provides an introduction to military medical ethics.

Feedback on the App

Feedback on the App can be provided in one of 3 ways:

A survey for App users is at:
https://survey.sparkchart.com/start/yzg7y920r1_2BknjdrfnNC9ws

A survey for educators that have used the App for teaching is at:
https://survey.sparkchart.com/start/tgAcVr8kLpYoDicZuBLJZQs

Alternatively, use the feedback page in the App.