Comparative review of the First Aid App

Deliverable 5: Final Report

Trilateral Research Ltd., Fraunhofer Institute for Open Communication Systems, Asian Disaster Preparedness Center and Utah State University – 26 February 2016

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This report is based on a research project commissioned by the Global Disaster Preparedness Center (GDPC), titled Comparative review of the First Aid App.

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ACRONYMS

ACRONYM	
ADPC	Asian Disaster Preparedness Center
CMS	Content Management System
GDPC	Global Disaster Preparedness Center
GFARC	Global First Aid Reference Centre
FOKUS	Fraunhofer Institute for Open Communication Systems
MDA	Magen David Adom
RC	Red Cross
RCRC	Red Cross Red Crescent
TRI	Trilateral Research
USU	Utah State University

EXECUTIVE SUMMARY

This report presents the key insights and findings from a Comparative review of the First Aid App commissioned by the Global Disaster Preparedness Center (GDPC). The study was led by Trilateral Research (TRI), with support from Fraunhofer Institute for Open Communication Systems (FOKUS), Utah State University (USU) and the Asian Disaster Preparedness Centre (ADPC). The project began in September 2015, with the aim of understanding the impact of the host organization, i.e., the National Society, on the rollout and uptake of the First Aid App, developed under the Universal App Program. The key insights and recommendations provided are designed to support the GDPC and National Societies in developing, rolling out and marketing the First Aid App in the future.

The information presented in the report is based on a combination of primary and secondary research focusing on nine countries (Czech Republic, Hong Kong, Iceland, Ireland, Israel, Malta, Mexico, Myanmar and Switzerland) participating in the Universal App Program. Primary research, consisting of face-to-face and virtual semi-structured interviews was undertaken with eight countries, in order to examine their experiences of the development, roll-out and marketing of the app. Virtual interviews with the British Red Cross (RC), the IFRC Global First Aid Reference Centre (GFARC) and the GDPC were conducted to supplement the data collected from the eight National Societies. Secondary research involving the analysis of Google Analytics data and (available) reviews of the app was undertaken to understand the use of and engagement with the app and user feedback on the app in each country. In parallel, desk-based research was performed to understand the local context of each country and to inform the findings.

The report first provides background information on the study and provides the motivations for undertaking the Comparative review of the First Aid App, related to the effort to understand the varying rates of app adoption by citizens in the countries participating in the Universal App Program.

Chapter 2 of the report presents a concise summary of the key insights gained from the nine countries related to the adoption, development and rolling out of the First Aid App. In order to provide a context to ground the findings in, each snapshot begins with general information on the country to show the similarities and differences in terms of: 1) country and population size; 2) age structure of the population; 3) languages spoken; 4) the structure and role of the National Society; 5) the economy; 6) connectivity and 7) the top three disasters faced. The snapshots also provide insights on each app across its lifetime, together with key findings related to:

- **Motivations for adopting the app:** The variety of contexts represented in this study required investigation into National Societies' expectations of adopting the First Aid App. For example, some National Societies were interested in providing first aid information to the public, reaching particular groups of the public (e.g., the young) and enhancing their positive image. The outside assistance provided by the GDPC was also key in National Societies joining the Universal App Program
- **Target groups:** In some instances, the app was targeted at the general public as a whole, however, in some countries, particular groups (e.g., children, companies, first aiders, beach-goers) were targeted

- **Development:** Developing the app involved the adaptation of content, and in many cases, language to be translated. Where the app was tested, this was primarily undertaken by local teams
- **Marketing efforts:** A combination of internal marketing and different communication channels, including (but not limited to) printed materials, television and radio advertising and social media were used to roll out and promote the app. In addition, many National Societies promoted the app in relation to a significant event (e.g., World First Aid Day)
- **Measuring success:** In many cases, success was related to the number of downloads of the app. Some societies had other measures of success such as increasing public awareness of first aid

Key insights from the interviews conducted with the British RC and IFRC GFARC are presented in Chapter 3. Beginning with contextual information on the UK, the British RC snapshot reveals that the British RC's motivation for developing the app was consistent with their 2010-2015 strategy of "Saving Lives, Changing Lives" and was related to increasing the number of people with direct access to first aid and emergency preparedness information. Since the British RC initially developed the First Aid App, the snapshot outlines the background research that was undertaken to develop the app. A wide range of marketing activities that were used to promote the app are described, together with the impact that these activities had in terms of app use, app rankings, media exposure and awards won. The second section of Chapter 3 focuses on the key insights gained from the interview with the GFARC, who review National Societies' requests for changes to the First Aid App content by ensuring that they are in line with the IFRC guidelines. In addition to explaining GFARC's role, this section highlights the challenges faced in terms of following up on the changes requested. Additionally, potential inconsistencies between the content of the First Aid App and taught first aid courses are raised.

Chapter 4 presents the lessons learnt from the study. It does so by comparing and contrasting the key findings in relation to National Societies' motivations in adopting, developing and rolling out the First Aid App. The chapter reveals societies' varying perceptions of what constitutes success for their version of the app. Some of these include increasing public awareness of first aid, the number of downloads and having a version of the app in multiple languages. The final section of Chapter 4 provides a comparative analysis of Google Analytics data across the nine countries. Starting with an overview of user engagement with the app in the first six months of each app's lifetime this section moves on to examine:

- The number of users in relation to the population size. While on average 0.3-0.7% of the population used each app in the first six months of its lifetime, for Iceland this was significantly higher at 3.97% and significantly lower for Myanmar at 0.01%
- The number of app users as a percentage of smartphone users. This ranged from 0.03% of smartphone users in Myanmar using the app to 6.10% of smartphone users in Iceland
- Average time spent using the app ranges from two minutes and 16 seconds (Ireland) to two minutes and 50 seconds (Myanmar)
- The number of screens visited per session varies from 7.02 (Iceland) to 13.53 (Myanmar)
- In five of the nine countries, burns is the most popular first aid topic

In addition, for each country, Chapter 4 provides an analysis of the relationship between critical events (e.g., disasters, national and international emergencies) and user engagement with the First Aid App. This section shows the potential impact that events can have on the number of users of the app and user engagement with the app. For instance, following four stabbing incidents in Israel, the number of users was 11.6 times higher on the day of the attacks, compared to the 30-day average following the attacks. Furthermore, the section examines how different types of events can have varying impacts on app use, as some events have immediate impacts, whereas for other events, the impact can be seen two days following the event.

Chapter 5 draws on the key insights and lessons learnt from the primary and secondary research to provide recommendations for the GDPC and other RCRC National Societies interested in adopting the First Aid App. The recommendations focus on the following stages:

- **Prior to joining the First Aid App Program:** The characteristics of both the National Society (e.g., resources and capacity, existing goals, reputation) and the local population (e.g., smartphone access, connectivity, competing apps) should be considered by National Societies considering joining the Universal App Program
- **The app development process:** Recommendations are provided to overcome the challenges faced in relation to time management, resource constraints, language issues, consistency, expectations of the CMS, centralization, and cohesion of the app development process
- **Rolling out and marketing the app:** This advice includes:
    - Learn from the good practices of other National Societies
    - Review the materials provided by the GDPC
    - Develop a marketing plan
    - Consider innovative ways of launching and promoting the app
    - Promote the app internally to gain buy-in from RCRC staff and volunteers
    - Promote the app beyond the launch period
- **Tracking and measuring the impact of the marketing activities:** Google Analytics and user feedback on the app can be used to analyse the impact of marketing activities and the use of and engagement with the app

In addition, Chapter 5 provides criteria for success factors for National Societies to understand the initial uptake of and long-term engagement with the app. The criteria that can be used are related to:

- **User engagement:** acquisition, engagement, retention and quality metrics
- **The host organization:** commitment and communication infrastructure of the host organization
- **The host country:** the infrastructure of the host country, local First Aid App market. and the threat level in the host country

This report and the recommendations and criteria for success factors aim to support the GDPC and National Societies in rolling out, understanding and taking action to engage audiences with using the First Aid App. Through collaboration between the GDPC and National Societies, the First Aid App has the potential to be a great resource for increasing people's knowledge of first aid and improving disaster resilience.

1 INTRODUCTION

In disaster situations (i.e., those requiring a response exceeding a community's normal capacity to respond)[1], emergency services are stressed beyond limits, leading to a substantial increase in the time taken to respond to requests from the population. As these delays can be life-threatening, it is essential to enable citizens to help themselves and each other in order to bridge the gap between the immediate demand for and supply of medical help in an emergency. This goal cannot be achieved during a disaster or emergency itself; instead, it requires pre-disaster preparedness and training for as many people as possible. The First Aid App within the Universal App Program and its adoption across the Red Cross Red Crescent (RCRC) network is one important step in this direction. This app enables citizens and volunteers to learn or refresh appropriate first aid procedures or disaster countermeasures (before and during an emergency). Importantly, the First Aid App is not designed to replace first aid training, rather it is an additional resource to complement the provision of first aid training and to more generally enhance first aid knowledge and encourage the uptake of first aid training.

The concept of the Universal App emerged following the release of First Aid Apps by the British Red Cross (RC) and American RC.[2] In May 2013, the Global Disaster Preparedness Center (GDPC) launched the Universal First Aid App Program designed to expand the availability of the First Aid App to additional countries. National Societies participating in the program are required to work with the GDPC to adapt the app content to their local context. To accomplish this local customization, National Societies must work with the Global First Aid Reference Centre (GFARC) to ensure that the app adheres to national and international first aid guidelines. In case of conflict, national guidelines should be followed since those are the guidelines against which the app will be evaluated in the local context. If for some reason, the project team decides to stick with international guidelines, any deviations should be thoroughly explained and proactively communicated to relevant stakeholders.

The advantage of the app is that it can reach beyond those audiences who would ordinarily be inclined to take a first aid courses, to those who may not consider this option, particularly as it does not require attending courses at a specific location or a given time. Furthermore, by working with host organizations (i.e., the National Society) in the adoption and rollout of the First Aid App, RCRC actors have full ownership of the content of the app, and therefore the training material included within the app can be aligned with the material used by the organization to avoid any miscommunication in advice given.[3]

This Comparative review of the First Aid App seeks to support the GDPC in understanding the impact of the host organization on the rollout and uptake of the First Aid App, developed under the Universal App Program.[4] The GDPC are currently reporting that the First Aid App is

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[1] Comfort, L.K., K. Ko and A. Zagorecki, "Coordination in Rapidly Evolving Disaster Response Systems - The Role of Information", *American Behavioural Scientist*, Vol. 48, No. 3, 2004, pp. 295-318. [p.298].
[2] Global Disaster Preparedness Center (GDPC), *Universal App Program: First Aid. Frequently Asked Questions*, no date. [Online] http://preparecenter.org/sites/default/files/universal_app_program_faqs.pdf (Accessed 13 January 2016).
[3] Global Disaster Preparedness Center (GDPC), *Universal App Program*, no date. [Online]. http://preparecenter.org/activities/universal-app-program (Accessed 14 January 2015)
[4] Ibid.

live in 76 countries across the world. Adoption rates of the app vary ranging from as few as one user in Togo to 410,109 in China.[5] Such a global dispersion with varying rates of adoption requires a cross-country and cross-regional comparative analysis. This study examines the potential impact and experiences of the host organization in encouraging the use of the app in the context of the National Society program. Such an evaluation can help to share good practices in encouraging the use of the app across the RCRC network – thereby driving adoption rates and ensuring that users are gaining the most value from the app. Furthermore, the study provides insights into how the First Aid App can support the delivery of first aid by National Societies, thereby enhancing the overall preparedness of the societies communities.

1.1 METHODOLOGY

This study uses a combination of primary and secondary research. Primary research in the form of semi-structured interviews were conducted with RCRC actors involved in the development, roll-out and marketing of the app in eight countries participating in the Universal App Program. For all interviews, a common interview guide was followed (See Annex A). All interviews were recorded and transcribed for subsequent analysis. Ethical safeguards relating to voluntary informed consent were followed, using an information sheet and informed consent sheet (See Annex B and C). The following table provides further information about the interview (unless specified otherwise interviews were conducted in a one to one setting):

Table 1: Semi-structured interviews conducted

Country	Date of interview(s)	How the interview was administered	Number of people interviewed
Czech Republic	30 November – 1 December 2015	Face to face – 1 group interview & 1 individual interview	3
Hong Kong	2-3 November 2015	Face to face	5
Iceland	11-12 November 2015	Face to face	5
Ireland	27 November, 7 & 14 December 2015	Virtual	3
Israel	29 October & 5 November 2015	Virtual	2
Malta	19 November 2015	Face to face	5
Myanmar	13 November 2015	Face to face – Group format	4
Switzerland	24 November 2015	Face to face – Group format	2

Subsequently, for each country plus Mexico[6], additional secondary research took place in the form of desk based research to understand the local context and the analysis of Google Analytics data. For each country involved in the study, three time periods were examined: the first six months of the app, the last six months of the apps activity (June – November 2015), and the entire duration of the app's life until November 2015. Because the apps were developed and rolled out at separate times, it was not possible to examine a common time period across the apps. Rather, the comparative component of this study is to examine the experiences of the host organization (i.e., the National Society) in adopting and rolling out the app and their initial impact in terms of understanding the success of the app. In addition, the

[5] Ibid.
[6] Unfortunately, it was not possible to conduct interviews with the Mexican RC due to time constraints.

study included a review of (available) customer reviews of the First Aid App, gathered from app download stores (e.g., Google Play and the Apple Store) and appFigures.[7] To supplement the material gathered, telephone interviews took place with the British RC, the Global First Aid Reference Centre (GFARC) and the GDPC to gather further insights into the development and success of the First Aid App.

1.2 THIS REPORT

What follows is a summary of key insights and findings revealed from the individual country examinations presented in the form of country snapshots. This is followed by some insights from additional groups involved in the First Aid App development, including lessons learnt from the experience of the British RC and the GFRAC. Subsequently a comparative analysis of findings is presented in the form of lessons learnt. The report concludes with a series of recommendations for future consideration in app development, marketing and engagement under the Universal App Program.

[7] appFigures is a web-based platform that provides business intelligence for apps. Within this study appFigures was used to view the Google Play and iOS reviews.

2 COUNTRY SNAPSHOTS

This study of the different National Societies provided a wealth of information about their experience when adopting, developing, and rolling out the First Aid App. This section provides a concise summary of the key insights gained from each country-based examination. Full versions of the findings from each country study can be found in the full country reports document.

Each snapshot begins by providing information on the demographic and economic characteristics of each country, in addition to information on the connectivity and disasters experienced. This information is included as it provides an understanding of the context of each country, which is an important part of interpreting the findings related to each National Society's experience of adopting and rolling out the First Aid App. For example, Malta being the smallest and most densely populated country participating in the Comparative review may explain why word of mouth was a preferred method of promotion. The presence of four national languages in Switzerland highlights how there is a need to provide versions of the First Aid App in multiple languages in Switzerland. Iceland having the highest level of Internet use explains why this country has the highest percentage of app users in relation to population size. Information on the disasters experienced has been included because as Section 4.5.1 on the event analysis reveals, the presence of threats in a country can influence the use and engagement of the app.

2.1 CZECH REPUBLIC[8]

GEOGRAPHIC AREA: 78,866 KM^2

POPULATION SIZE: 10.5 million

POPULATION AGE STRUCTURE: 43.7% - 25-54 years; 18.01% - 65+ years; 15% 0-14 years; 13.06% 55-64 years and 10.23% 15-24 years.

OFFICIAL LANGUAGE: Czech

OTHER LANGUAGES: Slovak

CZECH RED CROSS (RC)	
• Established: 1919, became the Czech Republic Red Cross in 1993 • National office: Prague; 76 branches • 81,000 members • 8,000 active volunteers, 1,000 youth volunteers	Plays a role in: first aid, emergency services, blood donation, housing and caring for the elderly and refugee support. Perceived high level of public trust in the organization.
ECONOMY	
Industrial production in the Czech Republic accounts for approximately 37.8% of GDP with primary	

[8] The data sources for all country snapshots can be found in the full country reports document: Trilateral Research, Fraunhofer Institute for Open Communication Systems, Asian Disaster Preparedness Center and Utah State University, *Comparative review of the First Aid App, Deliverable 5: Full country reports*, 26 February 2016.

industries being motor vehicles, metallurgy, machinery and equipment, glass, and armament.

CONNECTIVITY

Mobile phone usage is widespread and there are currently 131 mobile subscriptions per 100 inhabitants. As of 2014, records show that 77.5% of all inhabitants use the Internet. The smartphone penetration rate for the Czech Republic is 42%.

TOP 3 DISASTERS EXPERIENCED: 1995 - 2015 (DATA SOURCE: EM-DAT)

- Riverine Flood – 11 incidents, 93 deaths and 1,622,017 people affected
- Extra-tropical storm – 3 incidents, 8 deaths and 220,000 people affected
- Cold Wave – 3 incidents, 44 deaths and no other people affected

APP INSIGHTS – APP LIFETIME

App development period	Oct 2012 – Oct 2013
App launch date	13th October 2013
Number of users[9]	151,184
Number of screen views	5,740,412
Average session duration	02:48 minutes
Crashes	9,708
Most popular screen	Learn
Least popular screen	Bleeding Quiz
Most popular topic	Bleeding
Least popular topic	Losing consciousness
App sentiment	Generally very positive

KEY FINDINGS

Organization motivations for adopting the app

- Getting access to young people
- Being interactive
- New methods of training
- Provide new information quickly
- To be more trendy

Target groups

- General public – particularly young people and schools

Development

- Adaptation of content (incl. videos), language and contact details
- Adaptation took 12 months, inclusive of six months of intensive work
- Support from the GDPC via e-mail
- Testing was carried out by the local team and the app was tested on Czech RC volunteers

Marketing efforts

- Printed publications – newspapers articles, Czech RC magazines and books
- Banners – schools and universities
- Billboard banners
- Television advertisements (paid for and free)
- Collaboration with Czech airlines and insurance companies (on billboards and on-board magazines)
- YouTube

Measuring success

- Initial target for downloads: 100,000 which was achieved, albeit somewhat later that initially

[9] This refers to users that have had at least one session on the app and includes both new and returning users. This figure also reflects the number of downloads of the app.

anticipated
- Feedback received from the public via phone and mail – requested that the app be made available via windows operating systems and not just iOS and Android, and the app has to be storable on an SD card

Advice for others

- Make sure that all claims made in the app are evidence-based from a medical perspective
- Define the goals that you want to achieve (from a marketing perspective, and link the app with first aid education)
- Dedicate enough resources for the localization of the app: experts for the translation from English into the local language (and the expert must be a translator with expertise in medical translations), dubbing or at least subtitling of all videos
- Use a broad approach for marketing and allocate sufficient resources for this
- Emphasize that the app is free and accessible

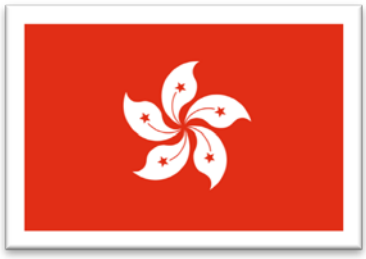
2.2 HONG KONG

GEOGRAPHIC AREA: 1073 km²

POPULATION SIZE: approximately 7,141,106

POPULATION AGE STRUCTURE: 46.16% - 25-54 years; 15.34% - 65+ years; 15.26% - 55-64 years; 12.11% 0-14 years and 11.13% - 15-24 years.

OFFICIAL LANGUAGE: Chinese (Cantonese) and English



HONG KONG RED CROSS

- Became autonomous from Red Cross Society of China on the 1 July 1997
- National office: Hong Kong – head office - Beijing; 5 regional divisions/branches
- 365 uniformed units; 20,400 volunteers
- 24 board members
- 6 service departments

Plays a role in: disaster relief and preparedness, first aid and healthcare, humanitarian services to care for the under-privileged, such as schooling for children in hospitals, organising voluntary services in the aging communities and organizing uniform groups for youths and adults.

There is perceived trust in the organization specially for its blood transfusion service as the main source of blood for hospitals.

ECONOMY

Hong Kong is considered to be a global trade hub and financial center and ranks in the top 10 in GDP per capita.

CONNECTIVITY

Hong Kong has 16,630,443 mobile subscribers, at a rate of 233 subscriptions per 100 inhabitants. Of these mobile subscribers 14,223,157 are 2.5G and 3G/4G subscribers. Broadband access is also widely available with 83.1% of households having access to broadband. In addition, there are also 39,796 public Wi-Fi access points. The smartphone penetration rate for Hong Kong is 86%.

TOP 3 DISASTERS EXPERIENCED: 1995 - 2015 (DATA SOURCE: EM-DAT)

- Tropical cyclone – 9 incidents, 10 deaths, 19,838 people affected
- Epidemic – 1 incident, 299 deaths, 1,456 people affected
- Riverine flood – 2 incidents, 80 deaths, 0 people affected (*this may be due to the lack of reported information)*

APP INSIGHTS – APP LIFETIME	
App development period	Mid-April – 16 August 2014
App launch date	16 August 2014
Number of users	34,266
Number of screen views	1,370,918
Average session duration	02:55 mins
Crashes	2,808
Most popular screen	Learn
Least popular screen	Contents
Most popular topic	Bleeding
Least popular topic	Stroke
App sentiment	Positive

KEY FINDINGS

Organization motivations for adopting the app

- Improving the penetration rate of public first aid knowledge, confidence and skills
- Optimise the vast use of mobile phones in Hong Kong
- App is also used as a resource for renewing first aid licenses
- Build and promote the brand and image of the Hong Kong RC

Target groups

- General public

Development

- Content development – localized text, images and video.
- Content and functionality is limited by the Content Management System (CMS)

Marketing efforts

- No formal marketing strategy in place
- Official launch via a press conference, including a demonstration of the app
- E-mail footer
- Integration into other Hong Kong RC activities (e.g., World First Aid Day)
- Presentation of the app in shopping malls via stalls and the distribution of pamphlets. The public would be encouraged to install the app and provided with a small gift as an incentive

Measuring success

- Measurement is limited to monitoring download rates via Google Analytics – lack of knowledge on Google Analytics and limited resources prevent them from any further engagement from an analytical perspective
- Hong Kong RC also collected comments and feedback available on Google Play and iTunes
- Interviewees believed that the app had limited success due to competition in the form of the well-establishes emergency services

Advice for others

- Develop more function in the app that will encourage users to go back and use the app frequently and increase user engagement. This included adding games and including a notification function in the app that will send messages through the app on announcements, early warning messages, safety messages, news and others
- Hong Kong RC suggested that in order for the First Aid App to be more responsive to the needs of the users, it needs more staff dedicated to maintaining and updating the app
- Hong Kong RC need training on how to use Google Analytics in order to maximize its functions and use its information to develop strategies and a formal work program for the app

2.3 ICELAND

GEOGRAPHIC AREA: 103,000 KM²

POPULATION SIZE: 331,918 – Over half of which reside in the capital city of Reykjavik

POPULATION AGE STRUCTURE: 40% 25-54 years; 20% 0-14 years; 14% - 15-24 years; 14% 65+ years; 12% 55-64 years

OFFICIAL LANGUAGE: Icelandic

OTHER LANGUAGES: English, Danish, Faroese, Norwegian, Swedish and German

ICELANDIC RED CROSS

• Established: 10 December 1924 • National office: Reykjavik; 42 branches • 20,000 members – 11,000 paid sponsors • Approximately 3,000 active volunteers	Plays a role in: health care, social work and education. Perceived high level of public trust in the Icelandic RC.

ECONOMY

Heavily reliant on the fishing industry - led to substantial economic growth in the second half of the 20th century. Iceland joined the European Economic Area in 1994 and has since diversified into the manufacturing and service industries, including into software production, biotechnology and tourism. Iceland was significantly hit by the financial crisis in 2008.

CONNECTIVITY

Iceland has an Internet penetration rate of 98%. Free Wi-Fi is widely available in many parts of the country. In 2013, Iceland was ranked 18% in terms of mobile broadband penetration with 74.3 active mobile-broadband subscriptions per 100 inhabitants. The smartphone penetration rate for Iceland is 59%.

TOP 3 DISASTERS EXPERIENCED: 1995 - 2015 (DATA SOURCE: EM-DAT)

- Landslides – 2 occurrences, 34 deaths, 83 affected
- Volcanic activity – 2 occurrences, 0 deaths, 0 affected
- Earthquakes – 2 occurrences, 0 deaths, 199 affected

APP INSIGHTS – APP LIFETIME

App development period	May – October 2013
App launch date	Dec 2013 – January 2014 - in time with the 90th Anniversary of the Icelandic RC
Number of users	29,128
Number of screen views	979,740
Average session duration	02:25 mins
Crashes	3,057
Most popular screen	Laerdu (Learn)
Least popular screen	Ebóla
Most popular topic	Bruni (Burns)
Least popular topic	Slag / heilablóðfall (Stroke)
App sentiment	Positive

KEY FINDINGS

Organization motivations for adopting the app

- Learning that others had developed an app – particularly the experience of the British Red Cross
- Cost effective, suitable language, suitable technology, something new that people were interested in, reaches a wider audience, provides free material acting as a refresher, available at all times and anywhere, useful in an emergency situation

Target groups

- Everyone
- Three groups were targetted via promotional materials – general public, kindergartens/schools and companies

Development

- Reviewing material - text and images for relevance to Iceland
- Translation of text from English to Icelandic
- Use of British Red Cross videos; lack of resources (e.g., time and money) restricted them from developing their own
- Testing – internal
- Daily contact with the GDPC

Marketing efforts

- Limited budget
- Roll out coincided with the 90th anniversary of the Icelandic RC – included in a short film on first aid
- Advertising signs at bus stops
- Liaison with phone company to promote the app
- Banner advertising – popular websites and phone directory sites
- Media coverage – including interviews
- Promoting app in first aid book, training materials & courses
- Icelandic RC website and first aid website
- Social media (e.g., Facebook and YouTube)
- E-mails to companies that had purchased first aid courses

Measuring success

- Do not formally measure success due to lack of resources
- Feedback received is on an informal basis
- Statistics were monitored via CMS on a regular basis – reduced when moved to Google Analytics due to it being more complicated
- Main criteria: number of downloads
- Criteria that would be useful: knowing whether it had saved lives – difficult to measure
- Factors deemed to influence uptake: interest in first aid, course attendance, enjoyment in using the app, advertising, Icelandic culture responsive to using this type of technology
- Barriers: phone compatability, internal communication (e.g., first aid instructors knowing to advertise the app)

Advice for others

- Dedicate further time for developing the app; two to three months deemed too little

2.4 IRELAND

GEOGRAPHIC AREA: 70,273 km^2

POPULATION SIZE: 4,892,305

OFFICIAL LANGUAGE: English and Irish Gaelic

OTHER LANGUAGES: French, Spanish, German and Polish

POPULATION AGE STRUCTURE: 21% 0-14 years; 12% 15-24 years; 44% 25-54 years; 10% 55-64 years; 13% 65+ years

IRISH RED CROSS

• Established: 1939 • National office: Dublin with a total of 110 branches • 14 board members • 5,000 volunteers	Plays a role in: provision of first-aid courses, running youth programmes, responding to local emergencies and treating injured persons, and the provision of humanitarian assistance in overseas emergencies. Perceived high level of public trust in the Irish RC.

ECONOMY

Nine out of the ten largest pharmaceutical industries in the world are located in Ireland. Ireland also has an extensive manufacturing program relating to computer hardware and software, as well as medical devices, media and telecom. The production of food and beverage also significantly contributes to the economy.

CONNECTIVITY

There is limited access to free Wi-Fi in Ireland. 3G and 4G covers most of the country, with good access in 90% of the country (defined as having access indoors and outdoors) and fair access over 8% (defined as coverage outside). Since 2008, the number of households with Wi-Fi access has increased from 63% to 82%. Ireland records 104 mobile subscriptions per 100 inhabitants. The smartphone penetration rate for Ireland is 57%.

TOP 3 DISASTERS EXPERIENCED: 1995 - 2015 (DATA SOURCE: EM-DAT)

- Floods – 4 incidents, 5 deaths, 4,400 people affected
- Storms – 13 incidents, 16 deaths, 200 people affected
- Epidemic/Viral disease – 2 incidents, 2 deaths, 1,375 people affected

APP INSIGHTS – APP LIFETIME

App development period	January 2013 – September 2013
App launch date	20th September 2013 (Irish First Aid Day)
Number of users	26,480
Number of screen views	710,542
Average session duration	2:17
Crashes	2,287
Most popular screen	Learn First Aid
Least popular screen	Lose unconscious and breathing quiz
Most popular topic	Burns
Least popular topic	Heat Exhaustion
App sentiment	Mostly positive with some (3-4%) negative feedback and ratings

KEY FINDINGS

Organization motivations for adopting the app

- Organization was provided with outside assistance in developing the app
- To spread awareness of first aid
- Good value for the end-user
- Cost-effective
- The advantage of having a First Aid App developed specifically for the local context

Target groups

- General public
- First aiders
- Irish RC volunteers

Development

- There was a general overview of the app
- Consultation of guidelines and Irish RC manual, as well as consultation of local legislation
- They identified conflicts between the information provided and their applicability in the local context
- Videos were then adapted to the local context and captions were added
- Content was changed, edited and fixed to apply to the local context
- Tested on numerous device versions and volunteers from the office
- List of bugs and edits were sent to the app developers to be fixed before the app was finalised

Marketing efforts

- Limited budget for marketing the app so as many free options as possible for publicising the app were used
- Week long campaign starting on the 20th of September 2013 to coincide with the Irish First Aid Day
- Advertised via Google Ad Grants, the Irish RC website and Facebook page
- Volunteers in customized t-shirts distributed leaflets in the streets of Dublin
- Reached out to local digital bloggers to advertise the app on their sites who were willing to do so for free
- Advertised the App on radio programs they were invited to

Measuring success

- Number of downloads and the number of return users
- Positive feedback from end-users
- Enhancing the reputation of the Irish RC locally
- Setting milestones (such as 10,000 downloads)

Advice for others

- Allow for flexibility in the setting of deadlines, since the testing phase was considered to be more challenging than expected. Time management was recognised as an aspect that was beyond one's control.
- Every single detail of the App should be tested and re-tested
- The disaster preparedness aspect of the app could be better developed by scaling back the content on first aid treatment and applying more preparedbess related content that is specific to the country context.

2.5 ISRAEL

GEOGRAPHIC AREA: 20,777 KM^2

POPULATION SIZE: Approx. 8 million

POPULATION AGE STRUCTURE: 37.13% 25-54 years; 27.95% 0-14 years; 15.5% - 15-24 years; 10.85% 65+ years and 8.57% 55-64 years

OFFICIAL LANGUAGE: Hebrew

OTHER LANGUAGES: Arabic, Russian and others

Magen David Adom (MDA)

- Established: 1930
- 119 stations across the country, 700 ambulances
- 1,200 full time employees
- 10,000+ volunteers
- Plays a role in: life support, intensive care units, training courses
- MDA is better trusted than its competitors (in the app market)

ECONOMY

Israel has a technologically advanced market economy with high exports: diamonds, technology and pharmaceuticals. Israel also benefits from trade and tourism.

CONNECTIVITY

In 2014 there were 120 mobile subscriptions per 100 inhabitants. 74.7% of Israelis are connected to the Internet. The smartphone penetration rate for Israel is 57%.

TOP 3 DISASTERS EXPERIENCED: 1995 - 2015 (DATA SOURCE: EM-DAT)

- Storm – 4 incidents, 27 deaths, 2,413,000 people affected
- Forest fire – 3 incidents, 44 deaths, 20,262 people affected
- Viral disease – 1 incident, 12 deaths, 139 people affected

Note: Israel suffers from severe security threats related to terrorism and armed conflict – considered the third most important threat (after road and domestic accidents)

APP INSIGHTS – APP LIFETIME

App development period	April 2013 – Sept 2013
App launch date	16 September 2013
Number of users	131,759
Number of screen views	4,812,574
Average session duration	02:26 mins
Crashes	28,931
Most popular screen	Learn
Least popular screen	Stroke
Most popular topic	Bleeding
Least popular topic	Shock
App sentiment	Very positive

KEY FINDINGS

Organization motivations for adopting the app

- Ubiquity: app is always there
- Give people a sense of safety
- Encourage people to provide first aid
- Reach young people
- Marketing for MDA
- Use of viral effects

Target groups

- General public
- Focus on young people

Development

- Adaptation and addition of content (incl. videos), language and contact details
- App developed in Hebrew and English – problems experienced in the process due to characters required and text alignment

Marketing efforts

- Press release to journalists, subequently picked up by the media via television promotion
- Footer in e-mails by MDA
- Social media – particularly Facebook
- Promotion by users (e.g., young people and instructors)

Measuring success

- The host organization believes that the First Aid App has been a success
- The app was downloaded by almost 132,000 users, with very limited marketing (more than 1.5% of the population and good for a safety and security app)

Advice for others

- Be aware that the app will be an ongoing commitment, it constantly has to be updated, topics added, bugs fixed etc. (otherwise the app will die over time)
- Delete content that is not relevant for your country
- Add content that is missing in the GDPC version but relevant for your country
- If you want to make the app bi- or multilingual, first start with your primary language and let it settle, and add other languages later
- In order to remind people of the app, you may consider an occasional use of push messages in a national emergency or when you add new topics of high relevance

2.6 MALTA

GEOGRAPHIC AREA: 316 km^2

POPULATION SIZE: 414, 000

POPULATION AGE STRUCTURE: 15.05% 0-14 years; 12.22% 15-24 years; 40.24% 25-54 years; 13.98% 55-64 years; 18.15% 65+ years

OFFICIAL LANGUAGE: Maltese and English

OTHER LANGUAGES: Italian, French and German

MALTA RED CROSS

• Established: 1991 • National office in Valletta – 2 branches • 6 board members • 60-80 volunteers	Plays a role in: provision of rescue services, first aid and humanitarian relief, as well as the provision of basic first aid courses that run at various points throughout the year. Also provide lifeguarding services. Perceived high level of public trust in the Malta RC.

ECONOMY

The islands' foremost industries exploit the coastal areas with the major contributors being tourism, ship-building and repair, and fish farming. The island is also heavily dependent on tourism and tourist –related services. Other significant contributors include the provision of financial services, online gaming companies and electronics.

CONNECTIVITY

As of December 2015, there were 192 free Wi-Fi spots across the island. There were 546,200 registered mobile users with a rate of 132 subscriptions per 100 inhabitants. The island has 3G coverage. As of 2014 73.2% of households are connected to the Internet. The smartphone penetration rate for Malta is 42%.

TOP 3 DISASTERS EXPERIENCED: 1995 - 2015 (DATA SOURCE: EM-DAT)

- Transport accidents (water) – a total of 434 recorded deaths between 1990 and 2015.
- No other disasters listed, Malta has been successively ranked as the 2nd safest and risk free country in the world.

Note: There is no EM-DAT data for Malta as no disasters have been recorded.

APP INSIGHTS – APP LIFETIME

App development period	December 2013 – December 2014
App launch date	29th December 2014
Number of users	3,752
Number of screen views	138,545
Average session duration	2:29
Crashes	111
Most popular screen	Learn First Aid
Least popular screen	Heart attack
Most popular topic	Burns
Least popular topic	Heart attack
App sentiment	Positive for the vast majority

KEY FINDINGS

Organization motivations for adopting the app

- Provided with outside assistance to develop the app
- The availability of other RC apps as references
- The possibility of creating a First Aid App that adheres to the local context
- Spread awareness of first aid
- Boost confidence in people who already know first aid

Target groups

- General public
- First aiders
- Students in schools

- 'Beach-goers'
- Family and friends

Development

- General overview of the content in the original app
- Red Cross guidelines and manual, as well as local legislation were consulted
- Identification of conflicts in the available content with local context
- All content in the app was referenced and images and information were adapted to the local context
- The changes were summarised in a PowerPoint presentation and presented to a technical committee for feedback
- The app was tested on Malta RC volunteers before being finalised

Marketing efforts

- Malta RC had no budget for marketing the app and relied on free advertising opportunities where available
- The app was launched at an event with the President of Malta on the 29th of December 2014
- The app was advertised on the Malta RC Facebook page
- It was advertised through first aid courses and by word of mouth
- The app was also advertised on radio and television programs members of the Malta RC were invited to attend

Measuring success

- Number of downloads of the First Aid App
- The positive feedback received from end-users
- The ability to spread knowledge of first aid to a wider audience via the app
- Having a version of the First Aid App adapted to the Maltese local context

Advice for others

- Collaboration with other RC societies is key in the successful adaptation of the First Aid App
- Stressed the need to cross-check the app information with local legislation, RC mandate and guidelines

2.7 MEXICO

GEOGRAPHIC AREA: 1,964,375 km^2

POPULATION SIZE: 121,736,809

POPULATION AGE STRUCTURE: 27.59% 0-14 years; 17.9% 15-24 years; 40.55% 25-54 years; 7.19% 55-64 years; 6.77% 65+ years

OFFICIAL LANGUAGE: Spanish

OTHER LANGUAGES: Nahuatl, Yucatec Maya, Mixtec, Mayo, Yaqui, Tzeltal, Tzotzil, Chol (and many more spoken by small indigenous groups)

MEXICO RED CROSS

• Established: 1910 • National office: Mexico City • 16 Board members • 43,000+ volunteers	Plays a role in national and international aid and disaster relief missions as well as various health services, such as first aid training for emergency medical technicians. Perceived high level of public trust in the Mexico RC.

ECONOMY

The Mexican economy is heavily focused on the manufacturing industry: motor vehicles, iron and steel, mining, petroleum extraction, production of chemicals and consumer durables. There is also the production of food and beverage products and tobacco. Lastly, tourism remains an important contributor to the Mexican economy.

CONNECTIVITY

2014 estimates state that there are 49.5 million Internet users in Mexico, 41.1% of the population. There were 102.2 million registered mobile users with a rate of 85 subscriptions per 100 inhabitants. The country has 3G & 4G coverage. The smartphone penetration rate for Mexico is 28%.

TOP 3 DISASTERS EXPERIENCED: 1995 - 2015 (DATA SOURCE: EM-DAT)

- Tropical cyclone – 59 incidents, 900 deaths, 7,010,656 people affected
- Riverine flood – 19 incidents, 254 deaths, 3,265,584 people affected
- Earthquake – 15 incidents, 149 deaths, 502,430 people affected

* *Mexico also has powerful drug-trafficking organizations that have been feuding since 2007, which has resulted in tens of thousands of drug-related homicides.*

APP INSIGHTS – APP LIFETIME

App launch date[10]	1st November 2013
Number of users	238,297
Number of screen views	10,809,026
Average session duration	3:14
Crashes	14,975
Most popular screen	Aprende/Learn
Least popular screen	About, heart attack quiz
Most popular topic	Bleeding
Least popular topic	Unconscious breathing and Using an EpiPen
App sentiment	Generally positive (91%) with some negative feedback (10%) for iOS and mostly positive (98%) for Android users

[10] Based on when usage of the app was first recorded by Google Analytics.

2.8 MYANMAR

GEOGRAPHIC AREA: 676,578 KM^2

POPULATION SIZE: 56,320,206

POPULATION AGE STRUCTURE: 43.31% - 25-54 years; 26.07% - 0-14 years; 18.15% - 65+ years; 18.02% - 15-24 years and 5.36% - 55-64 years.

OFFICIAL LANGUAGE: Burmese

OTHER LANGUAGES: Sino-Tibetan (Karen, Chin, Kachin), Tai Kadai (Shan) and Austroasiatic (Mon, Palaung, Wa)

MYANMAR RED CROSS SOCIETY (RC Society)

- Operations began in 1920 as a branch of the Indian Red Cross Society – became independent in 1959, and their name was officially changed in 1989
- National office: Nay Pyi Taw; 330 township branches
- The Central Council is comprised of 40 members, and 10 executive committee members
- 20,000 volunteers, 500 paid staff

Plays a role in: improving the health and wellbeing of vulnerable people and acts as an auxilary to the government in humanitarian services. Other activities include community based healthcare which includes first aid training in the townships including the private sector.

There is perceived evidence of public trust in assisting disaster affected communities based on their work after Cyclone Nagris in April 2008.

ECONOMY

- Economic growth remains strong in Myanmar, but signs of overheating have emerged due to supply bottlenecks and loose financial conditions
- According to the International Monetary Fund in its annual assessment, Myanmar is one of Asia's fastest-growing economies.
- The economy continues to expand on investment thereby stimulating the financial and telecommunication sectors

CONNECTIVITY

- Underdeveloped, with low mobile phone and Internet penetration – between the end of 2013 and September 2014, Myanmar's mobile penetration rate rose from 12.5% to 19.9% and signaled a rise of 87% in mobile subscribers for this period. In 2015, 7,100,000 users were registered online with a penetration rate of 12.6%. Internet subscription remains unaffordable to most of the population and there are less than 1 in 10,000 subscribers, one of the lowest rates in the region[11] 1.2% of the population are connected to the Internet. Myanmar has a mobile subscription rate of 49 per 100 inhabitants.
- The smartphone penetration rate for Myanmar is 34%
- The telecoms sector was liberated in 2013, it is expected to increase penetration from 7% to 50% by 2016

TOP 3 DISASTERS EXPERIENCED: 1995 - 2015 (DATA SOURCE: EM-DAT)

- Riverine flood: 13 events, 142 deaths, 498,714 people affected
- Tropical cyclone: 4 events, 138,681 deaths, 276,5155 people affected

[11] MMRD Research Services, *5 facts about the Internet market in Myanmar*, 2015. [Online] http://mmrdrs.com/2015/09/24/5-facts-about-the-internet-market-in-myanmar/ (Accessed 7 January 2016).

- Earthquake: 3 events, 112 deaths, 22,763 people affected

APP INSIGHTS – APP LIFETIME

App development period	January – July 2014
App launch date	1 August 2014
Number of users	36,009
Number of screen views	1,543,312
Average session duration	02:18 mins
Crashes	612
Most popular screen	Learn
Least popular screen	First aid kit, heart attack and broken bones
Most popular topic	Burns
Least popular topic	Allergy
App sentiment	Positive

KEY FINDINGS

Organization motivations for adopting the app

- Need for public access to first aid information as a result of public vulnerabilities to hazards (e.g., typhoons)
- Enhance the delivery of first aid training to school teachers
- App refered to in first aid training as a form of reference materal

Target groups

- General public – particularly villagers

Development

- App context edited to meet the needs of the local population – including text, pictures and videos
- Workshops carried out with relevant government departments to ensure the suitability of the apps' contents
- Challenge – fonts for the Burmese language – some devices are unable to recognise

Marketing efforts

- Advertise during events and training classes
- Use of local file sharing application Zapya that uses wireless networks to connect devices
- Use of posters and setting up of booths at Zay Cho Market and Shopping Mall in Mandalay and Junction Group Shopping Mall in Yangon
- Social media - Facebook

Measuring success

- Myanmar RC Society rely mainly on the feedback they receive from end users, particularly by word of mouth. However, the sharp increase in downloads over time is taken as a key indicator of the success of the app. Given the high cost of the Internet in Myanmar the high rate of downloads can also be considered a sign of success.
- Myanmar RC Society considered the fact that medical staff were also using the app as a refresher, as an indication of its professionalism and usefulness. The interest generated among people outside of the initial target groups (such as mobile companies and government departments) is also considered to be a sign of the success of the app.

Advice for others

- Need more detailed training on how to utlize Google Analytics in order to maximize its information to improve the app and increase user engagement
- Need to develop human resource capacities, such as an IT specialist that will do User Center Design through Google Analytics
- Update the app regularly and add more function about home and road safety
- Continue to pursue cooperation with the telecom company for promotion and marketing

- Expand its partnership to NGO's who can increase app uptake and as an additional source of support from Myanmar RC Society

2.9 SWITZERLAND

GEOGRAPHIC AREA: 41,277 KM^2

POPULATION SIZE: 8.1 million

POPULATION AGE STRUCTURE: 43.67% - 25-54 years; 17.76% - 65+ years; 15.09% - 0-14 years; 12.18% - 55-64 years and 11.29% - 15-24 years.

OFFICIAL LANGUAGE: German, French, Italian and Romansch

OTHER LANGUAGES: A mixture of other foreign languages due to the large quantity of foreign nationals.

RED CROSS APP BY THE SWISS SAMARITANS

• Established: 1866 (rescue organizations established from 1885 onwards) • National office: Olten • 27,000 active members	App was introduced by the Swiss Samaritans who are better known for providing first aid in Switzerland. However, the app was presented as a Red Cross app.

ECONOMY

Switzerland has a highly developed industrial sector that is focused on knowledge based production and high technology. The provision of services (e.g., financial) is also a key component of the Swiss economy.

CONNECTIVITY

In Switzerland, as of December 2015, there were 125 mobile subscriptions per 100 inhabitants. Wi-Fi coverage is widespread, but possibilities for free access to Wi-Fi is still underdeveloped since most hotspots are closed to the public or require a fee. As of 2015 86.7% of the population are connected to the Internet. The smartphone penetration rate for Switzerland is 54%.

TOP 3 DISASTERS EXPERIENCED: 1995 - 2015 (DATA SOURCE: EM-DAT)

- Riverine flood – 4 incidents, 10 deaths, 5,601 people affected
- Landslide – 3 incidents, 20 deaths, 1,781 people affected
- Extra-tropical storm – 7 incidents, 12 deaths, 10 people affected

APP INSIGHTS – APP LIFETIME

App development period	Mid-2013 – August 2014
App launch date	August 2014
Number of users	48,839
Number of screen views	1,438,451
Average session duration	02:20 minutes
Crashes	2,387
Most popular screen	Learn
Least popular screen	Unconscious but breathing

Most popular topic	Burns
Least popular topic	Hypothermia
App sentiment	Largely positive

KEY FINDINGS

Organization motivations for adopting the app

- High quality of the app
- Another form of e-learning
- Additional way to reach people
- Providing information in Romansch (later date)
- First aid education for laypeople

Target groups

- General public without medical expertise

Development

- Adaptation of content (incl. videos), language and contact details
- App developed in five languages – problems experienced in the process

Marketing efforts

- Press release by Swiss RC in three languages – also published on the Internet
- Report on the radio
- Air service rescue organization –a report in a magazine for donors (2 millions donors)
- Featured in a report in a computer magazine on useful apps in an emergency
- International promotion

Measuring success

- Deemed a success by the host organization, in terms of app quality (95% perfect), downloads, media coverage

Advice for others

- Integrate the app into your curriculum/courses
- Emphasize that the app is free
- Promote the app via your organization material – use a QR-code for easy access
- If you have to deal with multiple languages, remember that this will result in greater effort being required for developing the app

3 INSIGHTS FROM OTHERS

This section provides insights gained from virtual interviews conducted with the British RC and IFRC Global First Aid Reference Center (GFARC) related to their respective roles in the development and rolling out of the First Aid App.

3.1 BRITISH RED CROSS

As the British RC were the original developers of the First Aid App, an interview was conducted on 21st December 2015 with the Product Manager for Online Learning for First Aid Education, the Product Development Manager and the Head of First Aid Education, to learn more about their experience of developing, rolling out and measuring the success of their app. The snapshot below provides an overview of the key insights gained from the interview and the country reports provides the full write-up of the main findings.[12]

<table>
<tr><td colspan="2">GEOGRAPHIC AREA[13]: 243, 610 km^2

POPULATION SIZE: 64,088,222

POPULATION AGE STRUCTURE: 17.37% 0-14 years; 12.41% 15-24 years; 40.91% 25-54 years; 11.58% 55-64 years; 17.73% 65+ years

OFFICIAL LANGUAGE: English

OTHER LANGUAGES: Scots, Scottish Gaelic, Welsh, Irish, Cornish</td><td>  </td></tr>
<tr><td colspan="2">BRITISH RED CROSS</td></tr>
<tr><td>• Founded: 1870[14]
• National office: London</td><td>• Approximately 24,000 volunteers[15]
• Over 3,900 members of staff</td></tr>
<tr><td colspan="2">ECONOMY</td></tr>
<tr><td colspan="2">The UK is the third largest economy in Europe, with services (particularly banking), insurance and business services being the key drivers of GDP growth.[16] Manufacturing accounts for approximately 10% of economic output.</td></tr>
<tr><td colspan="2">CONNECTIVITY</td></tr>
<tr><td colspan="2">The UK has an Internet penetration rate of 92%, with 80% of homes having fixed or mobile broadband.[17] Sixty six percent of UK adults claimed to have a smartphone in 2014.</td></tr>
</table>

[12] A full write up is available due to the vast amount of information provided by the British RC during and following the interview. As the interview with the GFARC was shorter, the findings have been summarized in this document.

[13] Central Intelligence Agency (CIA), *The World Factbook*, no date. [Online] https://www.cia.gov/library/publications/the-world-factbook/geos/uk.html (Accessed 21 January 2016).

[14] British Red Cross, *The founding of the British Red Cross*, no date. [Online] http://www.redcross.org.uk/About-us/Who-we-are/Museum-and-archives/Historical-factsheets/The-founding-of-the-British-Red-Cross (Accessed 21 January 2016).

[15] British Red Cross, *2014 Report and Accounts*, 2015. [Online] http://www.redcross.org.uk/~/media/BritishRedCross/Documents/About%20us/Trustees%20report%20and%20accounts%202014.pdf (Accessed 21 December 2015).

[16] Central Intelligence Agency (CIA), *The World Factbook*, no date.

[17] Freedom House, *Freedom on the net, United Kingdom*, 2015. [Online] https://freedomhouse.org/report/freedom-net/2015/united-kingdom (Accessed 21 January 2016).

APP BACKGROUND	
App development period	August – December 2011 (approx. 5 months)
App launch date	2nd December 2011

KEY FINDINGS

Organization motivations for developing the app

- To increase the number of people with direct access to first aid and emergency preparedness information
- Consistent with the British RC 2010-2015 strategy of "*Saving Lives, Changing Lives*" focusing on expanding first aid education to all and the use of digitial media for first aid learning

Target groups

- The general population learning for leisure in advance of an emergency
- People using the app at the time of an emergency
- A, B, C1 demographic groups based on a classification of occupations

Development

- Research and intelligence to understand what the app could look like
- Monitoring the availability of similar apps
- Developing and testing first aid content on the British RC website
- Hiring an agency to develop the app
- Two rounds of focus group testing to: (1) categorise the names of sections and topics, and (2) to identify the adjustments required to improve the navigation of the app
- Making the app available on different devices

Marketing efforts

- Small marketing budget
- Advised to achieve a large number of downloads in a very concentrated timeframe
- Internal communications requesting British RC staff, first aid trainers and volunteers to download the app
- Internal promotion in magazines, newsletters, the British RC intranet, wageslips, e-mails and presentations
- Trainers requested to wear t-shirts promoting the app when teaching first aid
- Senior staff promoting the app at meetings
- Targeting the media with information and leaflets
- Advertising through iAd and Facebook
- Promoting the app on the British RC Twitter and Facebook accounts
- Information and links to download the app on the British RC website
- Displaying posters in the British RC stores and training centres
- Including the QR-code to download the app on street fundraisers clipboards

Impact

- Exceeded six month target of 30,000 downloads in 9 days and reached over 275,000 downloads in a year
- iPhone version of the app reached number one ranking in the health and fitness category of apps and number four in the rankings for all free apps
- Android version of the app reached number four in the health and fitness category
- Won best use of digital award at the UK CorpComms Awards
- Featured in news articles on The Guardian, Net Doctor and Digital Spy websites
- 17 uses of the 'tell us your story' form on the app
- Website visits from mobile phones have increased
- Bookings for first aid courses from mobile phones have increased
- Videos on the app have been viewed more times than the same ones online

Measuring success

- Use Google Analytics on a monthly basis to understand how people are using their app
- Success is related to reach (the number of downloads), engagement (how people are engaging with the app) and educational effectiveness (whether people increase their confidence and ability to do first aid)

- In depth research projects are conducted to measure success of the app
- Apathy and the public not being interested in first aid could potentially act as barriers to the success of the app

Advice for others

- Ensure that National Societies have the buy-in of their trainers and educators
- Have a robust plan to launch the app and to ensure that it is downloaded many times
- Encourage people to go on to the app stores, rate the app and leave comments
- Do not underestimate the amount of work required
- Make sure that the app is interactive, engaging and includes imagery
- Identify who the app is for and how the target audience will be reached at the outset. It is important that the app is marketed
- Only develop a Baby and Child First Aid App if there is a market for it and if there is the organizational capacity to heavily market it

3.2 IFRC GLOBAL FIRST AID REFERENCE CENTER

During the app development process, Red Cross Red Crescent National Societies are required to submit any changes to the clinical first aid content of the app to the Global First Aid Reference Centre (GFARC), the Universal App Program's partner. In its role as IFRC's hub of technical expertise, the GFARC provides support to its members in first-aid-related matters. This includes ensuring that National Societies follow the latest IFRC first aid and resuscitation guidelines, when consistent with their local context. In order to understand the GFARC's role and their perspective on the Universal First Aid App Program, an interview was conducted with a representative from the GFARC on the 5th January 2016.

The interviewee was very positive about the First Aid App, outlining how everyone having sophisticated mobile phones means that they can quickly access first aid techniques. While the interviewee believes that face-to-face first aid training is better, they recognized that the app provides the public with advice and that if people like the app content, it may increase the likelihood of them participating in a first aid course with their local Red Cross branch.

3.2.1 The GFARC's role in relation to the app

The GDPC provides National Societies with the content of the First Aid App, which should be checked against the content of the Society's basic first aid course. If National Societies want to make changes to the Universal App content and videos, National Societies are required to send these to the GFARC who will review whether the changes are acceptable based on the IFRC guidelines. While approximately 70 National Societies have adopted the First Aid App, only around 10 National Societies have typically requested changes to the content of their app. Typically, National Societies request a small number of changes (one to five) to their app, however, there are instances when National Societies have requested significantly more changes to the app content. The types of changes requested include replacing the techniques that should be taken in response to different types of scenarios (e.g., burns and heart attacks) and editing the existing content, for example by changing the terminology used.

In order to review the changes requested, the GFARC works with a number of external first aid reviewers from different regions of the world that are knowledgeable about the IFRC guidelines. The GFARC sends the requested changes to the reviewer who then provides feedback on the requested changes. This feedback is then checked by the Head of the GFARC before it is sent back to the National Society and the GDPC. If a change has not been accepted,

the GFARC will explain why and the National Society can engage in a discussion with the GFARC if they are unhappy about the decision. However, the interviewee indicated that it is only in a small number of cases that they have refused a change and a solution was found in each instance.

In February 2016, the GFARC will use the First Aid App to launch their first aid survey designed to learn more about the first aid techniques that the general population have used, where they were used, and where the public were trained. All National Societies with the First Aid App have agreed that the app can be used to send a notification to app users, requesting them to complete the survey. This enables the GFARC to collect data from app users in approximately 70 countries.

3.2.2 Challenges

The interviewee highlighted two main challenges in the development and use of the First Aid app. The first relates to the final version of the First Aid App in each country, that has requested changes in content, not being checked by the GFARC. As the GFARC do not review the final version of the app, they are not aware whether the National Society adhered to their feedback and implemented any changes that were rejected. However, the interviewee outlined how it would be difficult for the GFARC to review final versions of all of the apps when they are available in other languages. In many cases a translator would be required to check the final versions. In addition, the GFARC indicated that it may be the case that the GDPC checks that the final version of each app is consistent with the GFARC's feedback.

The second challenge relates to the inconsistency between the content of the First Aid App and the content of the taught first aid courses. As outlined above, the GFARC have only received requests for changes to the Universal App content from a small number of National Societies and discussions have indicated that for some National Societies differences exist between the content of the Universal App and their courses. The interviewee outlined how they would like to see this inconsistency improved and how it is important that the GFARC recommends that the content of the First Aid App and the taught first aid courses are consistent with each other.

3.2.3 Promotion of the app

Rather than promoting the First Aid App to the public, the GFARC promotes the app to National Societies at annual regional meetings and through a newsletter that was sent to approximately 400 people. The app was promoted at the meeting of first aid managers/coordinators in the Asia Pacific zone in November 2015, with 70 representatives present. Furthermore, the app will be promoted during the April 2016 meeting in Panama, which will have representatives from RCRC National Societies from the Americas attending to discuss first aid programs. The participants of the annual meetings were viewed as a good target audience to encourage to join the Universal App Program as they are the people that can decide whether the First Aid App should be adopted in their country. The interviewee outlined how the First Aid App is also promoted when the GFARC staff speak about the Centre's activities, however this is typically targeted at the National Societies.

3.2.4 Measuring the success of the app

The GFARC outlined how the success of the app could be measured in terms of the number of downloads in each country and the number of minutes that people spend using the app for.

Additionally, the interviewee would be interested in gaining knowledge on the topics that users have looked at and whether one topic is looked at more than another.

Having information on the quality of the app was also viewed as important by the interviewee. They recommended that interviews should be conducted with users of the app to understand their opinion on the clarity of the app and whether the app is too long or short.

In summary, the interviews conducted with the British RC and the GFARC provided additional key insights into the development and rolling out of the First Aid App. For instance, while the British RC's motivations for developing the app were similar to National Societies' motivations for adopting the app, the British RC had gained intelligence and undertaken research with the public as part of the app development process. The findings of the interview with the GFARC revealed some of the potential challenges that can occur during the app development process, related to the uncertainty over whether the GFARC's feedback on app content had been followed by National Societies and the potential for inconsistency between the content of the First Aid App and taught first aid courses. The GFARC have an important role to play in the further adoption of the app based on their engagement with National Societies. The insights gained from the interview with the British RC highlight how once the app has been developed, there are a wide variety of marketing activities that can be undertaken to promote the app with a limited budget. A robust launch plan focusing on achieving a large number of downloads in a concentrated timeframe was viewed as key to making the First Aid App a success. Furthermore, internal marketing to receive the buy-in of trainers and educators was viewed as being an important part of the process of trying to make the app a success. The British RC interview also provides insights for other National Societies who are interested in learning how to measure the success of their app, via Google Analytics and research projects.

4 LESSONS LEARNT

The interviews conducted with National Societies provided a key opportunity to compare and contrast findings in order to provide an insight about their motivations in adopting, developing and rolling out the First Aid App. Furthermore, the interviews also revealed key insights regarding societies perceptions of what constitutes success for their version of the app. The lessons learnt that are presented in this section will be used to inform the recommendations for National Societies and for the GDPC, thereby ensuring that findings can inform future activities.

4.1 MOTIVATION FOR ADOPTING THE APP

Three common motivations led the Red Cross National Societies in this study to adopt the app:

1) The ability to spread localised awareness of basic first aid among the general public;
2) the usefulness and value of the app to the user; and
3) the provision of assistance in adapting the app

Without a base version of the app, many National Societies would not have had the financial resources or technical expertise to develop the app.

For the Icelandic RC, the app was seen as a means to give people a refresher course on localised first aid knowledge and skills. For others such as the Czech RC and Myanmar RC Society, **the app provided a new way of providing first aid training**. Although the Czech RC stated that app-based training cannot replace face-to-face training, the app is in fact more suitable as a refresher or to get people to think about first aid in the first place. Combined, they enable the users of the app to gain (at the least) basic first aid knowledge. Furthermore, as seen with the Irish RC, the app was seen as being a valuable and useful tool for the end-user. Other National Societies saw value in the app as well. For instance, the Czech RC found that the app was useful in its interactivity which could subsequently facilitate its use. Elsewhere, the Icelandic RC saw the app as a useful tool in an emergency. Crucially, **the very structure of the Universal App Program is a source of motivation for National Societies because it provides them with the resources and technical expertise to develop their own local version of the app.**

In addition, the study found that National Societies were also motivated to adopt the app for a range of other reasons (see Figure 1).

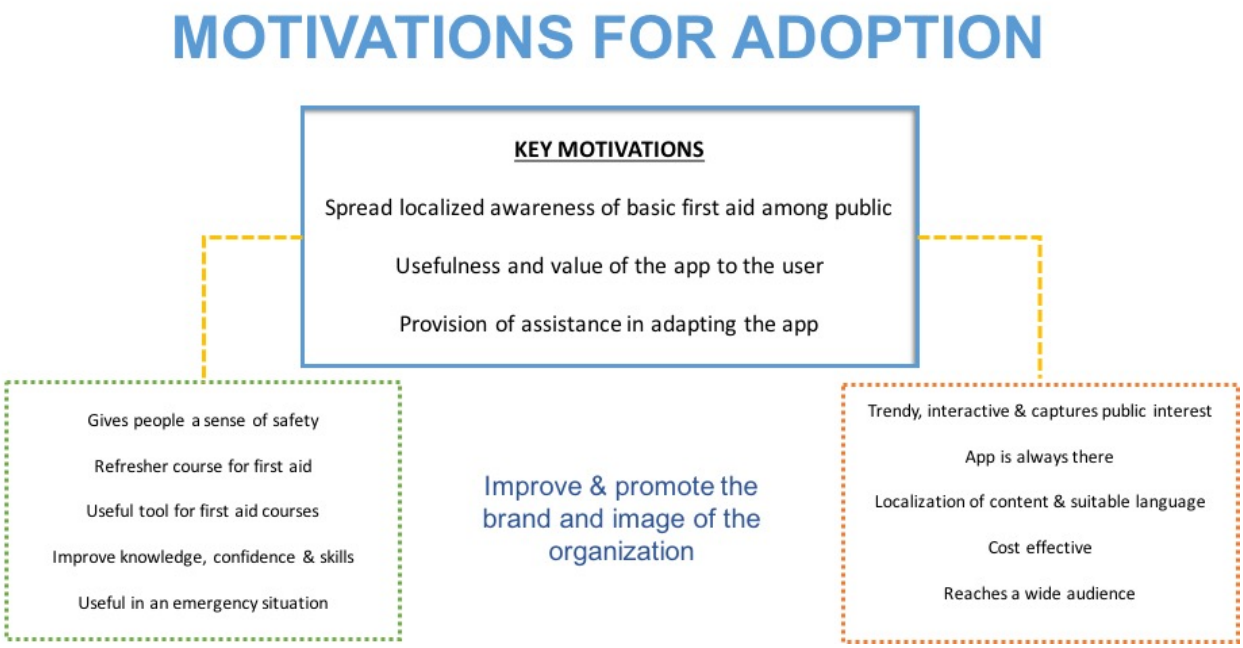


Figure 1: Motivations for adopting the app

For instance some National Societies, such as Hong Kong RC and MDA felt that the app supported them in **promoting the brand and activities of the organization** to a wider audience. Elsewhere, Hong Kong RC, the Malta RC, Irish RC and Icelandic RC envisaged the app as an accompaniment to the first aid courses they provided, adding that it would serve as a **course 'refresher'**. Interviewees from Hong Kong RC and the Malta RC also added that they thought the app could provide first aiders with **the confidence to provide first aid assistance** in the event of an emergency. When pressed further, the Malta RC interviewees stated that people with knowledge of first aid were often reluctant to provide assistance in emergencies for fear of 'getting it wrong' or 'being sued'. It was hoped that the app could act as a reference guide in such situations. Both the Czech RC and MDA hoped that the app would help the organization to get closer to younger people who, they deemed, would be among the target audience most interested and attracted to app.

The interviews also revealed context specific motivations for adopting the app. In Myanmar, for example, the app was needed because of the frequency of typhoons and other natural hazards and, additionally, to **provide first aid training to people who could not afford to attend first aid courses**. In Israel, the motivation was **to give people a sense of safety and security** and to update the general public on what to do in situations particular to their context (for example, the recent spate of stabbings and in relation to seasonal risks such as swimming accidents). Also important in Israel was also the fact that the app could be used without an Internet connection. Thus, there seems to be evidence of a relationship existing between risk awareness and the app's usefulness for managing risk.

For National Societies interested in adopting their own version of the First Aid App, the GDPC hosts a conference call with potential adopters to discuss the Universal App Program and the array of benefits that could be realised to support the wider goals of the organization.

4.2 TARGET AUDIENCE

For most societies the primary target audience is the general public. Some societies break the audience down further to include: **young people** (e.g., MDA), **schools, including teachers** (e.g., Czech RC, Icelandic RC and Myanmar RC Society), **companies** (e.g., Malta RC, Icelandic RC), **first aiders** (e.g., Irish RC and the Malta RC), and/or **volunteers** (e.g., Irish RC). Other societies, for instance the Malta RC, go a step further in segmenting their target audience into even smaller groups such as '**beach-goers**' and '**family and friends**'. Segmenting the public into smaller groups enabled National Societies to target particular groups with tailored promotional activities (e.g., school visits and advertising at schools, e-mails to companies).

Understanding the target audience for the application is extremely important for the roll out and continued adoption of the app, particularly in using specific marketing strategies to reach certain audiences. Importantly, those societies who view the target audience as simply the public may be better suited to narrow this audience down, or to segment this audience into categories that may be more reachable thereby enhancing their penetration rate. **The GDPC has shared guidance on understanding the target audience with National Societies.** This includes the Mobile Application Marketing Toolkit: Best Practices & Guideline.[18]

4.3 APP DEVELOPMENT

For many societies the process of developing the app appears to be a similar experience, with the majority of the time spent on adapting the content of the app to the National Society. All National Societies involved in the project stressed that even though they were given a completed version of the First Aid App, adapting it to their local context was **a long and laborious task,** with almost all societies involved taking a year to develop the app, with the exception of Iceland, Ireland, and Israel.

The GDPC outlined how they wanted a predictable timeline for the app development process to be able to manage their own resources and the resources of the vendor responsible for developing the app. The app development cycle, involving the review and editing of the app's content and final testing, is designed to last one month.[19] However, the translation of the app typically takes between two-three months, depending on whether there is an existing version of the app available in the base language. The dates for the app development process are sent to National Societies by e-mail, however, if National Societies are unable to meet these deadlines, there is some flexibility and they will be moved to the next development cycle. **To support National Societies in developing and testing their app, the GDPC have made a welcome packet available on the Prepare Center website**, which provides information on the CMS for developing the app, the inclusion of links and different media (e.g., images, animations, videos), and how to publish and test the app.[20] In addition, National Societies will be able to look at samples of other apps that have been developed. **The GDPC works with National Societies and the software vendor to develop the First Aid App.**

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[18] Global Disaster Preparedness Center (GDPC), *Mobile Application Marketing Toolkit: Best Practices & Guidelines*, no date. [Online] http://preparecenter.org/marketingtoolkit (Accessed 18 January 2016).
[19] Global Disaster Preparedness Center (GDPC), *GDPC Universal App Program – Mobile Application Development Cycle*, YouTube channel for the Prepare Center, 14 July 2015. [Online] https://www.youtube.com/watch?v=e4TDKUYPJHc (Accessed 21 January 2016).
[20] Global Disaster Preparedness Center (GDPC), *Welcome to the First Aid app*, no date. [Online] http://preparecenter.org/welcomepacketFA (Accessed 25 February 2016).

For most of the societies three common reasons were cited for the length of time needed to develop the app, namely:

1) Most of the people working on the app were either volunteers who did not have the technical expertise to deal with some of the issues that arose, or were members of staff who had to implement the app in addition to their normal workload, and
2) A lack of finances prevented them from employing people with technical expertise to help in developing the app; and
3) difficulties in adapting the app to multiple languages/alphabets.

Questions asked in the interviews relating to the development of the app revealed numerous context specific issues. **Language translation and implementation in the app** was a major issue for some societies. For MDA and the Myanmar RC Society many devices were unable to read **fonts and sections of the script**. The fact that Hebrew is read from right to left rather than from left to right was also an issue with some devices. In Myanmar, some minority language groups were not represented in the app and people from these groups were deemed to be some of those who would most need the app. For the Czech RC, it was noted that **a lack of funding prevented them from hiring medical expert translators** to translate the content for the app, where it was stressed by interviewees that it is not a question of simply translating the content but also the context, which not everyone can do. Instead, one of the first aid experts was responsible for all of the translations in addition to their normal workload.

In Switzerland, it was noted that the CMS provided by the GDPC initially only supported a maximum of four languages when the Samaritans had intended to include five. This was further complicated by the fact that **alphabetical ordering of the app content was only supported for one language**, the master language, German in this case. Users expressed frustration with the fact that the start screen could only be viewed in the master language which was German. Additionally, it was discovered that changes and updates to the app would have to be implemented individually for each language. However, the Swiss team noted that their inclusion of a wide range of languages that was representative of the Swiss population was advantageous. Their inclusion of Romansch provided a unique selling point and attracted some funding towards this purpose.

In Malta and Ireland, the original content in the app had to be carefully **scrutinized and cross-checked with local legislation and with their own mandate**. In Malta, for example, one section in the original app referred to the administration of aspirin, while in Malta the Red Cross are not permitted to administer aspirin but only to provide assistance. In Myanmar, suggestions in the original app to cover burns with plastic wrap were removed, since plastic wrap is not readily available or common in Myanmar. Most of the National Societies involved in the project also detailed how they **removed content from the disaster preparedness section of the app that did not apply to their local contexts**. However, in Hong Kong and Iceland many of these were kept since locals were well travelled and might find the information useful whilst abroad.

Interviewees with the Hong Kong RC highlighted the fact that **changes to the app could only be made via the CMS**, which was viewed as a limitation as it prevented them from further adapting the content and making it more engaging to the end-user. A significant issue to emerge from Myanmar was that many areas in the country do not have Internet connection. This aspect, coupled with widespread poverty, prevented the app from being used by the people the Myanmar RC Society deemed needed it the most.

In finalising the app, an important component for some socieities was testing the app prior to its launch. For instance the Icelandic RC **conducted an internal test of the application,** which enabled them to identify and correct any faults or confusing language before the app was launched. Likewise, the Irish RC conducted a series of tests across the development stage by **engaging volunteers in the testing process across a range of difference devices**. This testing of the app was perceived as useful by the Irish RC as it enabled them to fix any issues and continue improving the app. Aditionally, the Malta RC also conducted testing with volunteers. However, it does not seem as though all societies underwent testing of the app, or 'only' tested it within the project team. **Testing of the app is also conducted by the GDPC and the vendor, 3 Sided Cube**.[21] While the GDPC provides National Societies with guidance on the issues to look out for when testing the app, information could also be provided on who National Societies can involve in this process.[22]

4.4 APP ROLLOUT

Across the board, National Societies involved in the study bemoaned **the lack of funds available to successfully market and promote the app**. As a result, many of the societies had to rely upon **free marketing opportunities** and for some, a small budget. Some National Societies made reference to the Mobile Marketing Application Toolkit made available by the GDPC to provide support to National Societies in rolling out the app.[23] While the GDPC do share good practices and National Societies experiences of rolling out the app, they also recognize that National Societies have a better knowledge of their local context and how to reach the public. Crucially, this study has demonstrated that a variety of opportunities can be used to help roll out the app and gain end-user engagement. Popular choices for advertising included:

- **Internet-based advertising spaces:** such spaces include the use of National Society websites (e.g., Icelandic RC and the Irish RC) and social media accounts (e.g., the Czech RC used YouTube and the Irish RC, the Myanmar RC Society and MDA used their Facebook page). Other types of Internet-based advertising include sending tailored e-mails to specific groups (e.g., the Icelandic RC sent out tailored e-mails to companies that had purchased first aid training). Elsewhere, some National Societies chose to include an advertisement about the app as an e-mail footer (e.g., MDA and the Hong Kong RC) or to make press releases available online (e.g., the Samaritans operating under the Swiss RC).

- **Printed publications:** Printed publications include those publications authored by National Societies (e.g., magazines and books authored by the Czech RC and newsletters and annual reports by the Hong Kong RC). They also include articles in widely circulated print magazines (e.g., The Swiss First Aid App featured in a magazine sent out by the Air service rescue organization in Switzerland to their members, which are about 20% of the population).

[21] Global Disaster Preparedness Center (GDPC), *Universal App Program: First Aid. Frequently Asked Questions*, no date.
[22] Global Disaster Preparedness Center (GDPC), *App Testing*, 2 February 2016. [Online] http://preparecenter.org/sites/default/files/app_testing.pdf (Accessed 25 February 2016).
[23] Global Disaster Preparedness Center (GDPC), *Mobile Application Marketing Toolkit: Best Practices & Guidelines*, no date.

- **Radio and television:** Some National Societies were able to rely upon public forms of advertisement in the format of radio and television. For instance, the Irish RC and Malta RC advertised their apps via their participation on radio programs. For the Irish RC, this participation took place as a result of them having been invited. Elsewhere, the Czech RC advertised their app via both paid and free television opportunities.

- **Face to face opportunities:** The opportunity to discuss and present the app in a face to face setting was also used for advertising purposes. The Hong Kong RC for instance advertised their app in shopping malls via stalls and the distribution of pamphlets to passers-by. In addition, visitors to the stalls would receive a small gift by way of encouraging individuals to download the app. Elsewhere, the Irish RC used their volunteers to advertise their app by providing them with customized t-shirts and leaflets to be distributed on the streets of Dublin. Lastly, face-to-face opportunities were also used during first aid training courses by both the Malta RC and Myanmar RC Society.

- Advertising the app in tandem with another **large-scale event:** Some societies chose to advertise and/or launch their app to coincide with a related large-scale event. Such an event would provide an opportunity for further advertisement and for the app to be noticed. Examples include: The Hong Kong RC optimizing the World First Aid Day, Myanmar RC Society used the International Day for Risk Reduction (IDRR) to promote the app, the Icelandic RC launching their app during the 90th anniversary of the Icelandic RC and the Malta RC advertised their app during an event at which the President of Malta was present.

- **Advertising the app in co-operation with commercial partners**: The Czech RC used an existing partnership with Czech Airlines to include information on the app in the airline's billboard campaign and on-board magazine. Myanmar RC Society partnered with 'Zay Cho Market and Shopping Mall' in Mandalay and 'Junction Group Shopping Mall' in Yangon to display posters and set up display booths in their commercial establishments.

Figure 2 (below) provides further information on the various types of marketing approaches used across the National Societies:

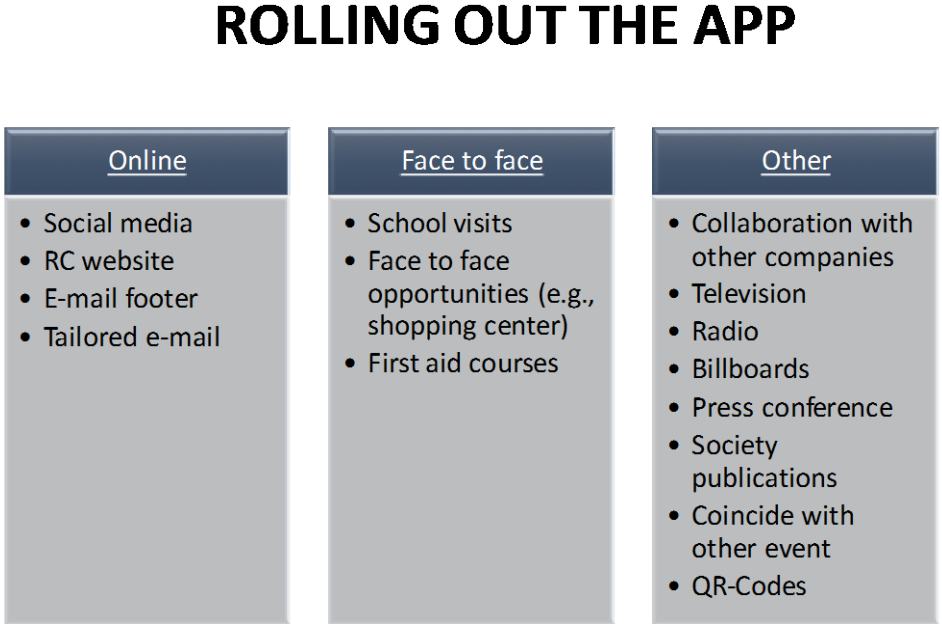

Figure 2: Marketing options

Due to budget related restrictions, National Societies had to rely not only on the originality of the app to market itself, but also on **their own reputation within their own communities**. As a case in point, the initial marketing by the Czech RC through billboards, schools and universities attracted the attention of different media groups, such as TV stations, where the app was discussed on three TV channels. In Israel the app became popular with young people who actively promoted it with their friends and family. Whilst in Malta, being a small island where people are closely connected, **word of mouth was identified as the best method of promotion**. The Malta RC noted that specific incidents, such as a woman choking to death in a crowded restaurant with no one to assist her, sparked public interest in the app. The novelty of the app in Iceland attracted the interest of media outlets and the Icelandic RC were invited to **promote the app on radio talk shows**. It was noted that Icelanders who bought their devices from the US or UK were initially unable to download the Icelandic version of the app until it was allowed to be placed in the US app store. Furthermore, the Icelandic RC were able to **build a relationship with a local phone company who participated in the promotion of the app**. Societies such as MDA also relied upon word of mouth to help inform people about the existence of the app.

Although most societies came up with innovative ways to launch and promote their version of the app for free, the interest generated was generally short-lived and lack of funding, time and technical expertise were an impediment to continual promotion and improvement of the app. Section 5.3 provides recommendations for promoting the app beyond the launch period.

4.5 MEASURING SUCCESS

The First Aid App, containing life-saving information, is currently available in 35 languages in 78 countries, at no cost to the National Societies who have adopted the app. The interview with the GDPC highlighted how this scope and reach of the First Aid App reflects the success of the Universal App Program, together with the engagement that National Societies have had with the program. **However, it is not considered enough to just have an app out there. It is important that National Societies also set a target for what they want their app to achieve.** For instance, the GDPC suggests that setting a target number of downloads in

relation to the countries smartphone penetration rate is a more realistic target than focusing on downloads alone. The GDPC also outlined how there has been a **shift away from measuring success in relation to the number of downloads towards measuring it in relation to engagement with the app over time.** To support National Societies in measuring the success of the First Aid App, the GDPC has made Google Analytics reports available to each society which provide information on the use and user engagement with the app.

Generally, the societies in the study considered the First Aid App project a success if it managed to increase the level of public awareness about first aid. In the context of the Malta RC, this could be confirmed to some extent. Maltese interviewees stressed that given the small size of the island and close relations that existed between people, word of mouth had been the most effective medium for promoting the app. Accordingly, **regular feedback was also received through word of mouth and daily interactions,** where the society deemed that from this feedback, people had engaged with the material on the app to such an extent as to approach Malta RC members when they were carrying out their duties (e.g., lifeguarding on the beaches) to specifically ask about information contained in the app. In Ireland and Iceland there were reports of **the app having been used to successfully save people's lives in an emergency situation**. However, as outlined by the Icelandic RC, for them, there is currently no evidence to suggest that the app encourages people to attend a first aid course, and on the flip side, whether attending a first aid course encourages people to download the app. As identified by the British RC in the analysis of their own app, where possible, National Societies hosting the app **could analyze if there is any notable increase in the number of mobile based bookings for first aid courses**.[24] Understanding the impact of the app on the public's awareness of first aid requires further research in order to truly understand its impact.

Societies involved also measured success by the **number of downloads recorded** (e.g., Czech RC, Icelandic RC, Irish RC, Malta RC and Myanmar RC Society), **positive feedback received** (e.g., Irish RC and Malta RC), **the location of users** (Czech RC), and the **number of return users** (e.g., Irish RC), or active users in a given time period (MDA). In the majority of cases, National Societies did not have a goal in terms of what would constitute a success. The exception to this was seen with the Czech RC, the Icelandic RC and the Irish RC who had **established an initial goal and/or milestones for the number of downloads**. The Czech RC set a milestone of 100,000 downloads which was reached after a year, whilst Iceland set a milestone of 20,000 downloads and Ireland set a milestone of 10,000 downloads. In some instances, National Societies, such as the Icelandic RC reported a lack of resources that prevented them from monitoring engagement with the app. Furthermore, the Icelandic RC and Hong Kong RC reported that the **use of Google Analytics for monitoring engagement with the app was seen as complicated**, which appears to be a barrier to engaging with data indicating how well the app is doing for the National Society. Elsewhere in Myanmar, it is difficult to understand the full success of the app in terms of the number of people using it. This is predominantly because instead of relying solely on app stores to download the app, some citizens share the app with one another using Zapya due to **the high cost of connecting to the Internet**. Zapya is a file sharing mobile application. As such, for some National Societies, understanding the full success of the app in terms of the number of downloads may not be entirely reliable.

Other views of success included, the Samaritans in Switzerland considering the fact that they had **released the app in five languages to be a sign of success**. Elsewhere, the Czech RC

[24] Smith, Brad, Nadine Threader, Christine Boase, Brianne Valley, Victoria Watts, Billy Cometti, Felicity Pointer, Kevin Hartzenberg, *Mobile app project evaluation,* British Red Cross, no date.

stated that another measure of success was that the app allowed them to **connect with young people in schools** and draw attention to their activities. The same was true for MDA where the app became 'cool' among young users. For the Irish RC, **enhancing the image of the organization locally** was also seen as a form of success.

A key point of enquiry within the study was whether there was any relationship between the risks faced in a country and adoption of the app. At present this does not seem to be a measure of success that National Societies can investigate. In part this may be due to there being a lack of information on local preparedness levels. Further research that seeks to more specifically engage the user in their motivation for adoption may shed further light on whether risk awareness influences app adoption and use. In Malta it was noted that a much publicised incident of a woman choking to death in a restaurant and a major sporting accident led to a sudden, albeit short-lived, interest in the app and in first aid more generally. Articles appeared in local newspapers bemoaning the lack of first aid training, with newspaper commenters posting links to the Malta RC First Aid App. Likewise, in Israel providing specific content related to national emergencies or seasonal threats led to a spike in app usage. There are, thefore, some indicators that interest in the app is not so much driven by general perception of risks, but by ongoing security or safety incidents. Section 4.5.1 of this report provides some insights into the impact of security events on user engagement with apps. While it is not possible to ascertain a definitive correlation, it does provide some insight into a potential relationship existing, and therefore the need for further research in this area.

In order to provide further information on measuring success, the following sub-section provides a comparative analysis of findings across the nine countries examined in this study in relation to app data from Google Analytics.

4.5.1 Findings from Google Analytics

The following table (2) provides an overview of the user engagement with the app in the nine countries in the first six months of the lifetime of the app. It is important to note that, as outlined in the country snapshots, there are marked differences across each country in terms of the population size, demographics, culture and connectivity, all of which, in addition to the efforts of marketing the app may impact on the potential uptake and engagement.

Table 2: Comparative analysis of app engagement in the first 6 months

Country	Population size (approx. millions)	Smartphone penetration rate	# of new users	New users as a % of the population (Approx.)	# of sessions	Total screen views	Average session duration (minutes)	Screens per session	#of crashes
Czech Republic	10.5	42%	45,327	0.43	118,078	875,915	02:29	7.42	4,507
Hong Kong	7.1	86%	22,797	0.32	85,897	852,897	02:54	9.92	1,956
Iceland	0.3	59%	11,902	3.97	34,891	244,891	02:44	7.02	1,320
Ireland	4.8	57%	11,234	0.23	37,238	268,509	02:16	7.21	849
Israel	8	57%	57,653	0.72	174,952	1,346,531	02:26	7.7	18,332
Malta	0.4	42%	2,804	0.7	12,848	105,374	02:25	8.2	90
Mexico	121.7	28%	94,907	0.08	312,405	2,704,290	02:50	8.66	6,700
Myanmar	56.3	34%	6,108	0.01	18,906	255,793	02:41	13.53	193
Switzerland	8.1	54%	25,080	0.31	95,506	693,920	01:58	7.27	433

Number of users in relation to the population size

A comparison of the number of users proportionate to each country's population size reveals that an average of between 0.3-0.7% of the population used the app in the first six months, with two notable exceptions, Iceland and Myanmar, that merit some clarification.

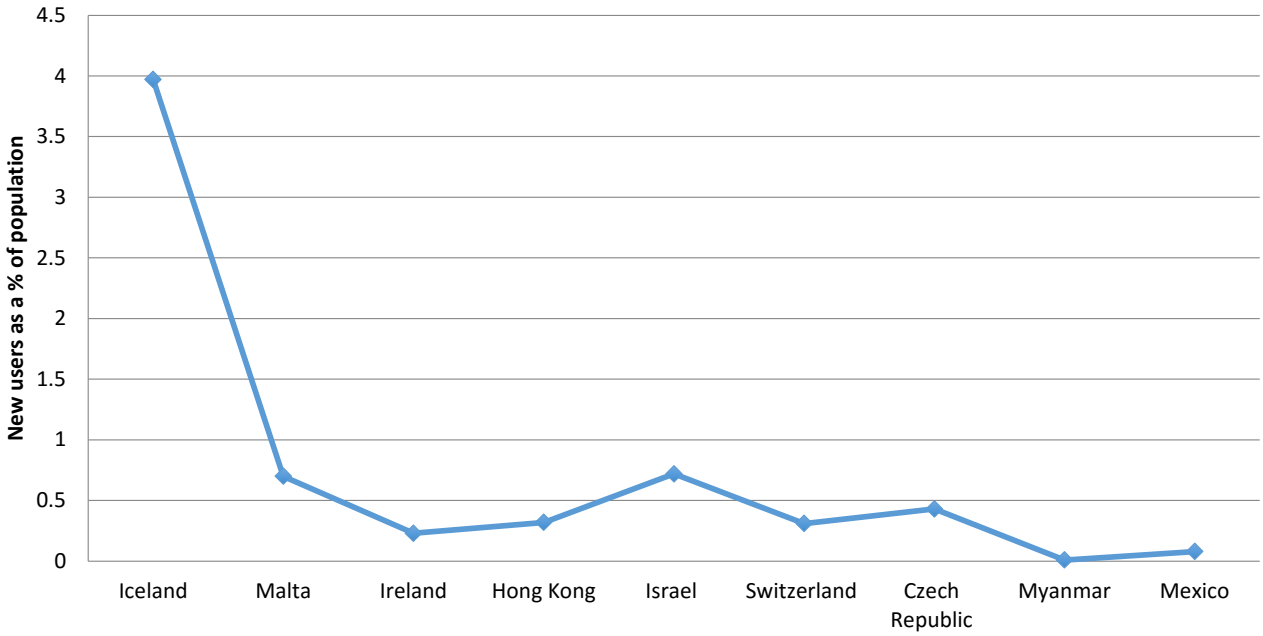

Figure 3: New users as a percentage of the population (approx.)

As seen in Figure 3 Iceland records a user rate representative of 3.97% for a population of approximately 300,000, whereas Myanmar records a user rate representative of only 0.01% for a population of approximately 56.3 million. Part of the explanation for this anomaly could be that although Wi-Fi access is available across all of Iceland, **access in Myanmar is one of the lowest in the South-East Asian region** with a penetration rate of one per 10,000 people. In addition, the Internet in Myanmar is reported to be unaffordable for the majority of the population. Furthermore, the roll-out and marketing efforts for most countries included in this study were predominantly centered on the country capital or around the location of the society's main headquarters. In the case of **Iceland few people live in rural areas and most are concentrated in the capital Reykjavik**, therefore promotional activities in Iceland were more likely to directly target a larger percentage of the population than in the other case study countries.

However, both Malta and Hong Kong exhibit the same population distribution around the National Society headquarters as in the Iceland case study, probably more so with Malta being a small island state and Hong Kong a special administrative city state. In the cases of Israel, Switzerland, Mexico and Ireland, the **absence of a marketing strategy to target more remotely located sections of the population likely accounts for the lower rate of adoption** in comparison to Iceland. In Hong Kong and Malta, it does not. A possible explanation for the latter could be that interviewees in the Hong Kong RC stated that target populations did not regard the app as very useful given the presence of a well-established and efficient emergency services system. Whilst in Malta interviewees stressed that lack of funding and an **over-reliance on promotion by word of mouth limited the wider uptake of the app by the general public**. In addition, Malta is consistently ranked as one of the safest countries in the world with relatively few risks and thus, interviewees stated that locals do not feel that first aid is a primary concern for them.

Smartphone penetration rate

In addition to considering the number of app users as a percentage of the population, analysis was carried out to understand the relationship between the smartphone penetration rate in each country and the number of app users. Table 2 above illustrates the smartphone penetration rate as a percentage of the population. Figure 4 illustrates the number of app users as a percentage of the 'smartphone population'.

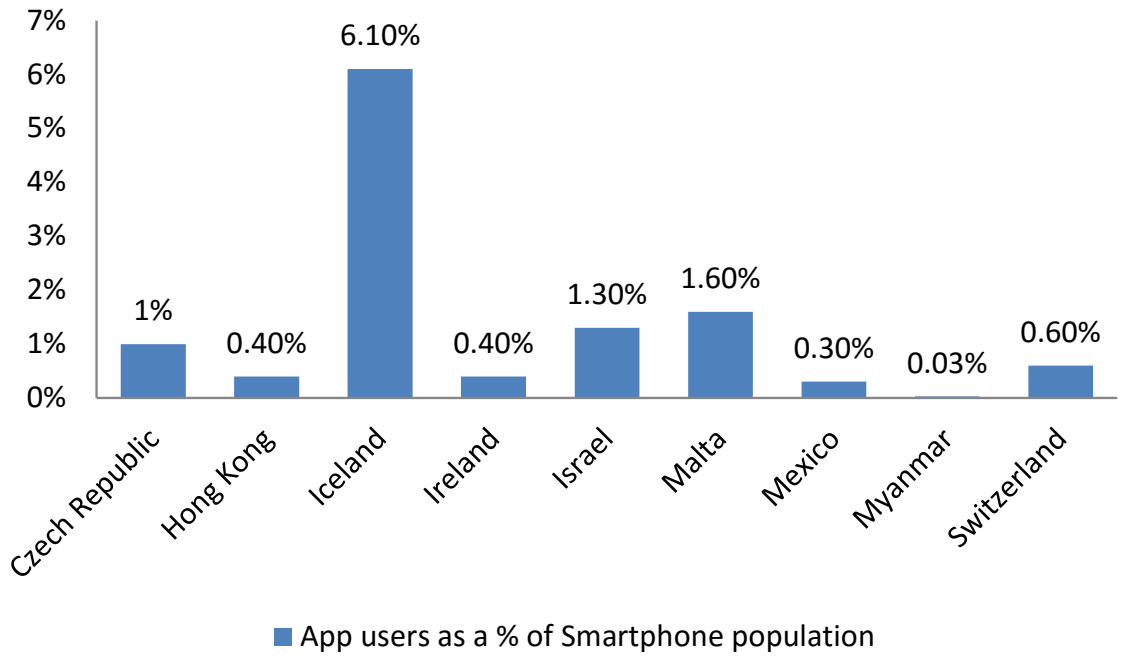

Figure 4: Comparative representation of app users as a percentage of the smartphone population

When considering the proportion of app users in conjunction with the smartphone penetration rate in each country, the success of the app and the effectiveness of the National Societies' marketing strategies are more accurately reflected. In the case of the Czech Republic, Israel and Malta the percentage of app users proportional to the smartphone population increases to 1% and above (see Figure 4). Both the Czech Republic and Israel specifically targeted young people in their marketing strategies, where interviewees from the Czech RC commented that the app was regarded as 'cool' and trendy by young people. In both cases the marketing strategy focused on schools and universities and, the predominance for younger people to own and use smartphones, accounts for this higher representation among app users. In the case of Malta, the small size of the island and the close connections that exist between people may account for the high representation of users among the 'smartphone population'. Iceland recorded the largest representation of app users proportional to smartphone population with a percentage of 6.1, which reflects the extensive promotion and marketing strategy of the Icelandic RC, coupled with the fact that most of the population lives in the capital city and were likely to have been targeted by the organization's marketing efforts.

Ireland, Mexico and Switzerland registered a lower representation of around the 0.5% mark. It is unclear why this is the case but a possible explanation could be that much of the marketing was focused in the capital city in each country, the population of which is relatively small in comparison to the country population. The extremely low representation in the case of Myanmar of 0.03% may be explained by the fact that some users downloaded the app using the file-to-file sharing software Zapya and therefore an accurate monitoring of user downloads was

not possible. Hong Kong also registered a relatively low proportion of app users in a city-state with one of the highest global smartphone penetration rates. The latter reflects data collected from interviews with Hong Kong RC staff who stated that the presence of well run and organised emergency services diminished the First Aid App's appeal.

Average session duration

As seen in Figure 5, when comparing the average amount of time that a user spends engaging with the app, findings from this cross-country analysis reveal that the least amount of time spent on average was one minutes and 58 seconds (Switzerland), while the most amount of time spent using the app was two minutes and 50 seconds (Myanmar).

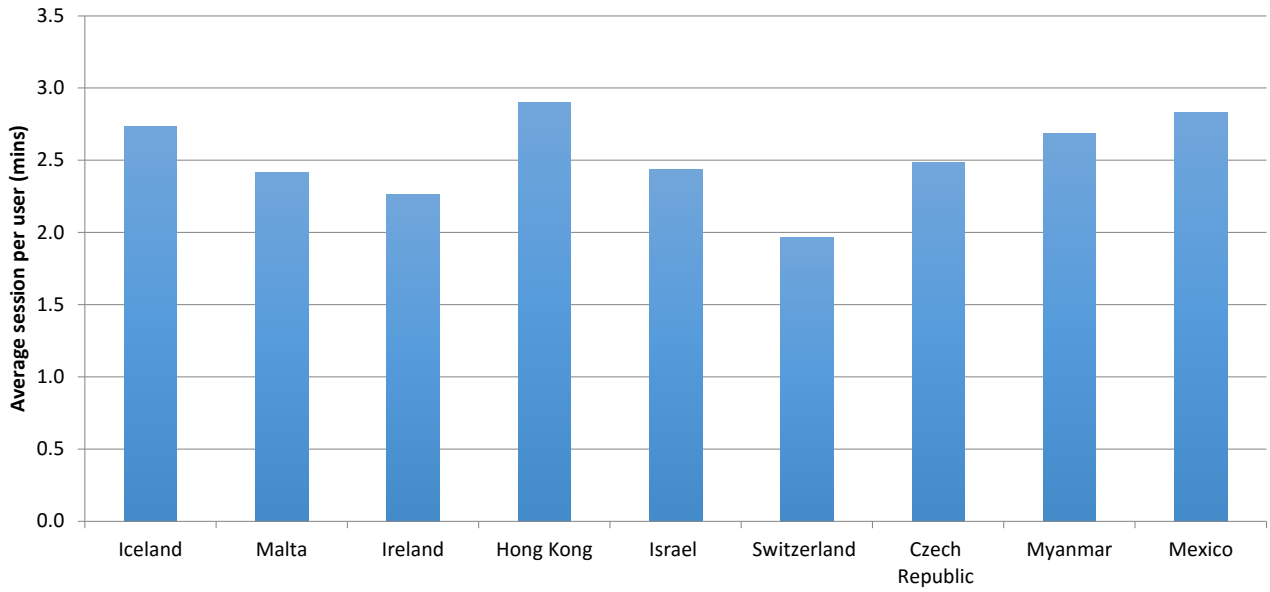

Figure 5: Average session time per user in each country

The **average session duration across the nine countries was 2.52 minutes**. A study by Böhmer et al. in 2011 examined app use by 4,125 US and European Android users.[25] The study revealed that over a 163 day period, 22,262 application events were recorded and on average users spent little more than a minute using an app. More recent analysis indicates that the average app session lasts approximately 5.7 minutes.[26] In comparison, users of the First Aid App are spending approximately half the amount of time using the app. However, as usage of apps varies across different categories (e.g., social networking, music, health and fitness) more representative data is required in order to accurately interpret how usage of the First Aid App compares to the use of similar types of app. While this provides some insight into whether the app is capturing people's attention, it would be worth repeating such an analysis at a later date, with a more recent (comprehensive study) to serve as a comparison.

Screens per session

Across the nine countries, as displayed in Figure 6 (below) users visit multiple screens in a single session. The greatest number of screens visited was seen in Myanmar, where users visit

[25] Böhmer, Matthias, Brent Hecht, Johannes Schöning, Antonio Krüger, and Gernot Bauer., "Falling Asleep with Angry Birds, Facebook and Kindle – A Large Scale Study on Mobile Application Usage." *Proceedings of the 13th International Conference on Human Computer Interaction with Mobile Devices and Services - MobileHCI '11*, Vol. 47, 2011, pp. 47-56. http://dl.acm.org/citation.cfm?doid=2037373.2037383.

[26] Localytics, *Time in App Increases by 21% Across All Apps*, 16 September 2014. [Online] http://info.localytics.com/blog/time-in-app-increases-by-21-across-all-apps (Accessed 26 February 2016).

approximately 13.53 screens per session, which on average for Myanmar, lasted two minutes and 41 seconds. The least amount of screens visited in a single session can be seen in Iceland, where users visited 7.02 screens on average over a period of approximately two minutes and 44 seconds.

It is worth noting that although **an average of seven screens are viewed per session**, this may translate into multiple first aid topics consulted which would suggest that users consult the app for very specific topics and, contrary to what the number of screens suggest, do not simply flip through numerous topics. Further investigation with users directly on the amount of time spent using the app in a single session, and their interaction with different screens would help the GDPC and National Societies understand whether the content hosted on the app is retained by the user.

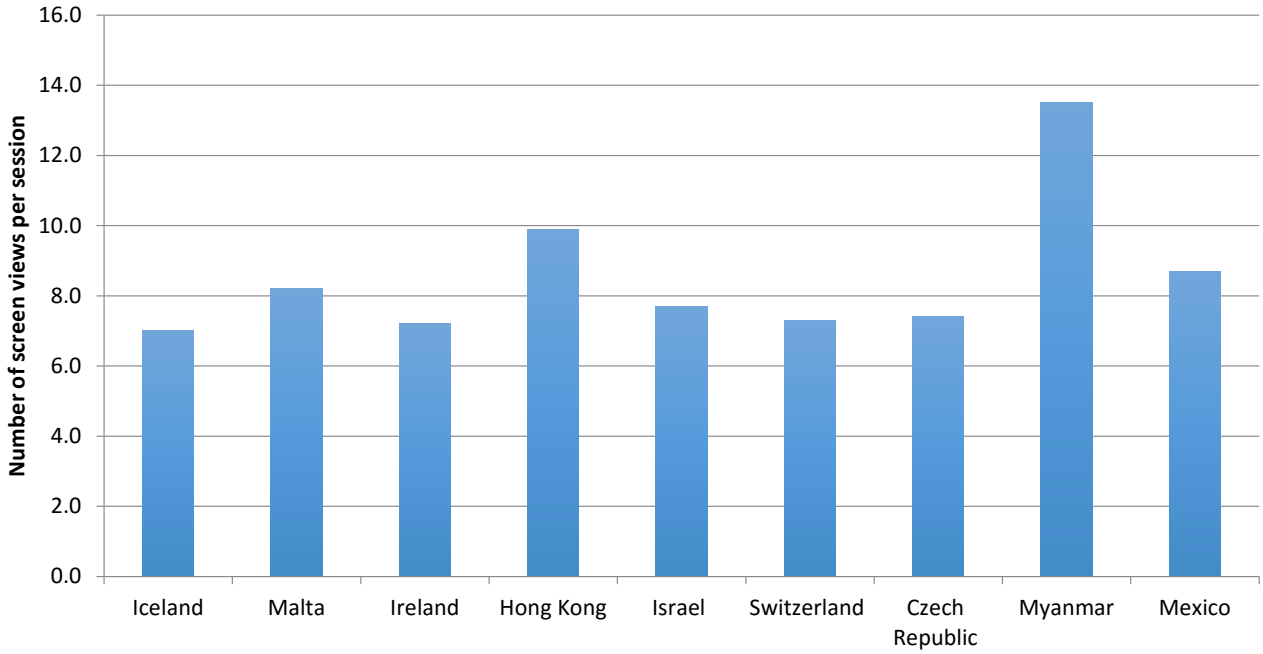

Figure 6: Number of screen views per session

Number of crashes based on the number of sessions

Figure 7 (below) illustrates the number of crashes as a percentage proportion of the number of sessions recorded in the first six months.

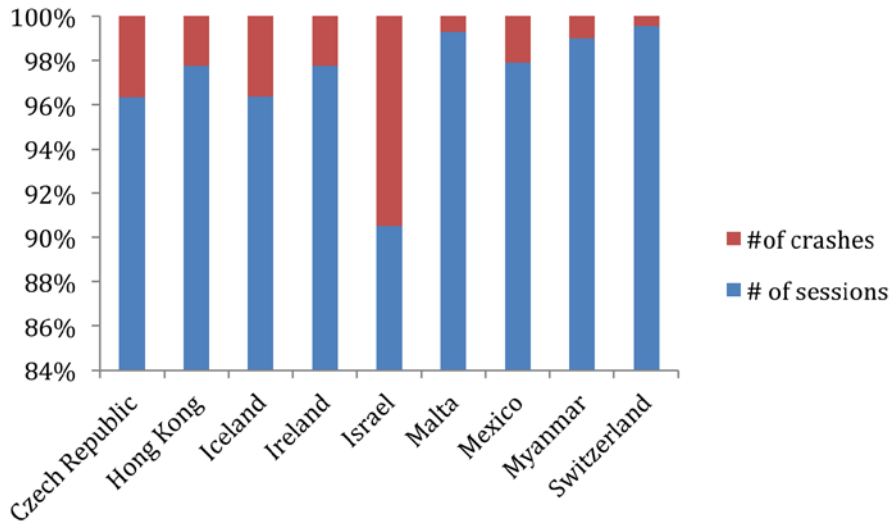

Figure 7: Number of crashes in proportion to the number of sessions

While most countries experienced some problems with the compatibility of the app with some devices, **most of these technical difficulties had been resolved following the roll out of the app**. Drawing on the available data, the three countries with the highest rate of crashes (Czech Republic – 3.8%, Israel – 10.5% and Iceland – 3.8%), all recorded their highest number of crashes following the launch of the app. Users across all countries noted that **the app took up too much space on their devices** although given the propensity for a high number of crashes to coincide with a high number of sessions it is difficult to tell whether issues of space are a contributing factor. Countries that had problems with the app reading the primary language script, such as Israel, may also have experienced issues as a result. However, Switzerland, which has five different languages on its app, recorded the least number of crashes, possibly because the languages included did not have unrecognizable scripts/fonts (as opposed to Hebrew for example). A relatively low number of crashes for Ireland can be attributed to the fact that **the app was tested on multiple devices prior to its launch to deal with bugs at an early stage**. The low number of crashes in Malta may also be attributed to the fact that the app was rigorously tested by Malta RC volunteers on a number of devices and issues were immediately reported to the project manager.

Interest in first aid topics

Table 3 (below) provides a comparison of the first aid topics of interest across all countries and reveals certain similarities, as well as differences that are congruent with each country's particular local context.

Table 3: Most and least popular first aid topics

Country	Most popular topic	Least popular topic
Czech Republic	Hemorrhage	Losing consciousness
Hong Kong	Hemorrhage	Influenza
Iceland	Burns	Stroke
Ireland	Burns	Heat exhaustion
Israel	Bleeding	Shock
Malta	Burns	Heart attack
Mexico	Bleeding	Unconscious but breathing and using an EpiPen
Myanmar	Burns	Headache
Switzerland	Burns	Unconscious but breathing

The most popular first aid topic in 5 countries was 'burns' which suggests that the app is commonly used in a domestic setting, burns being one of the most common household accidents.[27] The interest in 'Hemorrhage' in Hong Kong and the Czech Republic is unclear, although at the time the app was launched, the Ebola crisis was at its peak and, since hemorrhaging is a symptom of the disease, the interest in this first aid topic may be linked. In the case of Israel, bleeding was the top first aid topic and stabbing was one of the least accessed app topics. This could be due to the fact that the topic was inserted very late in the project (less than two months before the end of analysis) and, people are more likely to look up bleeding, rather than stabbing. Additionally, for both Israel and Mexico the popularity of the 'bleeding' screen may be related to the high incidence of violence in both countries.

The least popular topics also present an interesting grouping, with topics such as: heart attack, stroke, and loss of consciousness representing serious conditions that are also not uncommon. The latter data suggests one of two things, namely:

1) these are topics that people would not normally associate with first aid but rather with professional medical services and, as a result, do not actively search for them on the app, or
2) the seriousness of these conditions suggests that people are less likely to want to provide first aid in such situations and thus would not actively search for them.

The latter point supports information provided by a number of interviewees, in Malta and Ireland, who stated that most people are hesitant about providing first aid assistance for fear of 'getting it wrong' or being sued. The identification of heat exhaustion in Ireland as the least popular first aid topic is congruent with the climate in the country. However, the assertion by interviewees that emergency services are slow to respond in Ireland might also suggest that people would be more inclined to provide first aid for more serious conditions. The selection of influenza in Hong Kong is particularly revealing given that the region has been frequently associated with different strands of influenza, as well as, common outbreaks.[28] The latter suggests, as interviewees have emphasized, that Hong Kong has an efficient emergency health service that caters to the public's needs in this area and, it is thus unlikely that they would consult the app for related information.

Real-time events and app engagement

This study investigated whether a relationship exists between critical events (e.g., disasters, national and international emergencies) and user engagement with the app, by analyzing user engagement during two critical events for each case study country (see Table 4, below).

[27] Benenden, *10 most common accidents in the home and how to treat them*, 2015. [Online] https://www.benenden.co.uk/healthier-you/family-health/10-most-common-accidents-in-the-home-and-how-to-treat-them/ (Accessed 20 January 2016).
[28] Centre for Health Protection (CHP), *Seasonal Influenza*, 24 February 2016. [Online] http://www.chp.gov.hk/en/view_content/14843.html (Accessed 20 January 2016).

Table 4: Events investigated in each country

Country	Event 1	Event 2
Czech Republic	Cyclone Yvette	Heat wave
Hong Kong	Typhoon Kalmaegi	Typhoon Mujigae
Iceland	Storm	Paris terrorist attacks
Ireland	Storm Desmond	Belfast riots
Israel	Four stabbing attacks	Mortar attacks
Malta	Choking incident	Paqpaqli (Motocar incident)
Mexico	Hurricane Patricia	Large earthquake
Myanmar	Seasonal Monsoon	Flooding
Switzerland	Tornado	Train collision

The events selected by the research team were either of national significance or international events that were deemed likely to have had an impact on users' considerations of personal risk (for example the November 2015 Paris terror attacks). Google Analytics data was used to record user engagement with the app on the day of the incident, the two days following the incident and, the month (30 days) from the day of the incident. While it is clear that **some events have had a marked and obvious effect on user engagement,** it is difficult to determine with absolute certainty that the events investigated have affected user engagement in the absence of user feedback in this regard. Rather, what the initial results of this study suggest is that **'event analyses' would be an area that deserves further research that more closely involves end users and end user feedback**. This section thus provides an overview of the results from each country case study and outlines some of the commonalities, observations and points of interest.

Figure 8 (below) takes one event with the most significant results from each case study country and compares the change in the number of users engaging with the app in the first two days following the event.

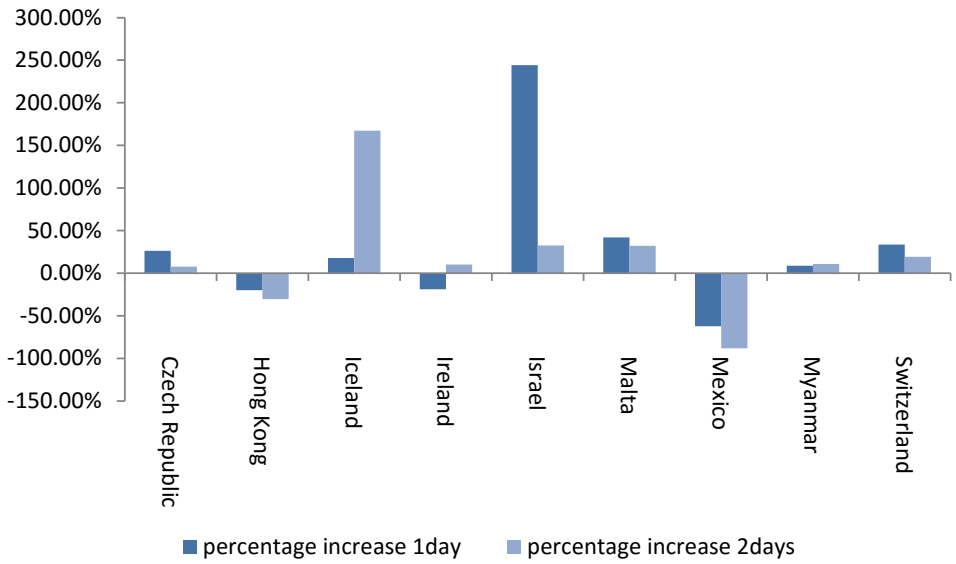

Figure 8: Percentage increase in users across all countries for the two days following one event

Figure 8 reveals some large surges in the number of registered users of the app in the days following the event, as well as some notable decreases that merit some qualification. Israel recorded the highest surge with a 244% increase in users. The event recorded was a spate of stabbings in four different localities across the country on the same day. Given that the most popular first aid topic on this day was bleeding, it is safe to assume that the event had a

credible impact on user engagement with the app. Mexico, on the other hand, registered the opposite behavior with a decrease in users of 62% and 88% respectively for the two days following Hurricane Patricia. However, these figures do not accurately reflect user engagement on these days. From a monthly average of 753 users, the Mexican First Aid App registered 10,320 users on the day of the event, decreasing in the following days, in all likelihood as the storm passed and the perceived risk subsided. The number of users on both days following the event were still respectively over 400% and 200% the monthly average. The most popular first aid topic on the day was Hurricane, indicating that the event had a marked impact on user engagement. In fact, for all the case study countries user engagement with the app on the day of the event and the two following days was significantly higher than the monthly average.

The data raises some important questions that merit further investigation:

1) How do end users interpret risk?
2) how do different critical events intensify users' sense of risk?
3) What does user engagement reveal about host communities' sense of preparedness?
4) What does user engagement with particular first aid topics during critical events reveal about cultural constructions of risk?
5) What does the level of user engagement with the app during critical events tell us about the longevity of risk?
6) How can user engagement with the app during critical events direct the further development of the First Aid App?

Drawing on these questions and the data illustrated in Figure 8, three trends may be identified. In Iceland, Israel and Malta, surges in user engagement are observed in the days following the event. In the case of Iceland, the event investigated was the terrorist attacks that took place in Paris on the 13th November 2015. In Israel, the stabbing incidents across the country. Lastly, in Malta, a choking incident that raised awareness about the public's lack of knowledge of first aid. In all three cases the events represented scenarios that could repeat themselves in the very near future (or were, in the case of the stabbing incidents, part of a series of events), in other words **they represent an extended and ever present risk, situations** therefore that are more likely to keep users' attention for a longer period of time following the event.

In Mexico and Hong Kong a surge in user engagement was noted on the day of the event, that then decreased drastically in the following days. In the case of Mexico, the event was Hurricane Patricia, whilst in the case of Hong Kong it was Typhoon Kalmaegi. Both cases represented **quick onset disasters that are seasonal and for which some prediction system exists** (weather forecasting) and thus user engagement is likely to be short-lived.

In Ireland, Czech Republic and Myanmar user engagement with the app increased but remained somewhat constant throughout the period observed. Both Ireland and the Czech Republic experienced flooding over an extended period of time, that represented a combination of the other previous two scenarios outlined, in other words **a quick onset disaster that lasted over an extended period.** It is also worth noting that in both cases severe flooding was located in rural areas where there were likely to be a lower proportion of First Aid App users.

Myanmar represents a unique case where the data collected represented two critical points in the seasonal monsoon flooding that lasted months. Most flooding was concentrated in more rural areas were app users were least likely to be located. It should also be pointed out

that since the app in Myanmar is mainly shared via Zapya, a mobile to mobile software sharing platform, Google Analytics is unlikely to provide the whole spectrum of user engagement for this period.

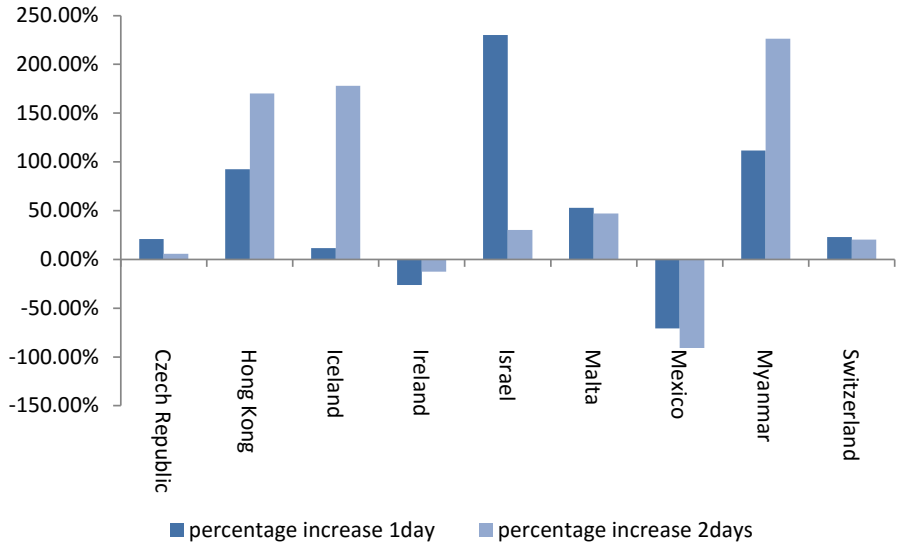

Figure 9: Percentage increase in sessions across all countries for the two days following one event

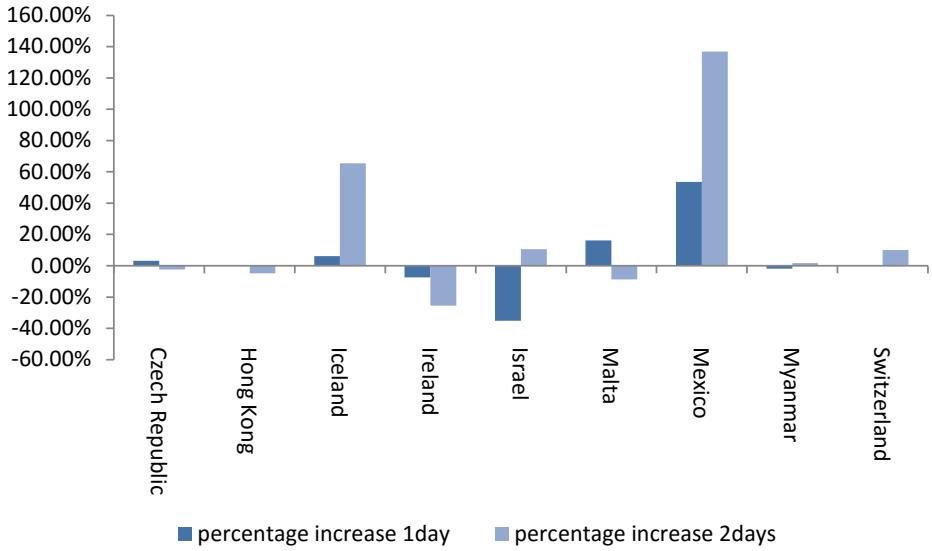

Figure 10: Percentage increase in screens per session across all countries for the two days following one event

Figures 9 and 10, illustrate the number of sessions and the number of screens per session for the period of investigation across all countries. In most cases the most evident increase in sessions is paralleled by a significant drop in the number of screens per session, which suggests that while there was an increased level of user engagement with the app, the focus of these sessions were on more specific first aid topics. Again the figures do not fully reflect the data when compared to the monthly average, especially in the case of Mexico, where consideration of the data available one day before the event would have revealed a higher percentage of sessions versus a very low percentage of screens per session. This relationship between increased sessions and more focused first aid topics is supported by the data presented in the table (5) below, for some countries. For example, in Israel, Mexico, and Malta the most popular topics at the time of the event are congruent with the data available for the number of sessions and the percentage of screens per session, suggesting that, at

least in these three cases, the events had a notable impact on user engagement with the app. Further investigation into the location of users, their feedback, local perceptions of risk, user perceptions of the app and, the relationship between first aid topics and particular critical events, would further enhance the understanding of the local communities involved and, as a result would facilitate the further development of the app to cater to specific local needs.

Table 5: Events analysis and the most popular first aid topics at the time of the event

Country	Date of event	Type of event	Most popular FA topic at time of event
Czech Republic	16/05/15	Cyclone/flooding	Emergency preparedness
Hong Kong	16/09/14	typhoon	Hemorrhage
Iceland	13/11/15	terrorism	Chest Pain
Ireland	05/12/15	Flooding/storm	Prepare for emergencies
Israel	08/10/15	Stabbing attacks	Bleeding
Malta	22/09/15	Choking incident	Choking
Mexico	23/10/15	Hurricane	Hurricane
Myanmar	16/07/15	Flooding	Burns
Switzerland	06/06/15	Tornado	Bleeding

The lessons learnt from the study, provide key insights for improving the adoption, development, roll out and continued use of the First Aid App. The subsequent section will draw on these lessons in order to provide recommendations to National Societies and the GDPC in their future operations within the Universal App Program.

5 RECOMMENDATIONS

This section draws on the key insights and lessons learnt from the primary and secondary research, and provides recommendations for other RCRC National Societies interested in adopting the First Aid App. Recommendations for the GDPC are also provided to enhance the support that is provided to National Societies during the development, roll-out and marketing of their app. First, advice is provided for National Societies that are considering participating in the Universal App Program, before moving on to provide recommendations for developing and rolling out the First Aid App and measuring its success.

5.1 PRIOR TO JOINING THE UNIVERSAL APP PROGRAM

Joining the Universal App Program provides National Societies with the technology and support to develop a customized and localized version of the First Aid App for their local population. In deciding whether to participate in the Universal App Program National Societies should consider:

The characteristics of the National Society

- ***Does the National Society have the resources and capacity required to adapt, roll out, market, and maintain the First Aid App?*** The key insights identified from the National Societies already participating in the Universal App Program indicate that significant time is required to both adapt the app to the local context and to roll-out and market the app to their population. In addition, additional resources may be required for the translation of the app's content into different languages.
- ***How would the app support the existing goals of the National Society in relation to first aid training?*** For example, the app can be used to increase accessibility to first aid information, to support the existing information that is provided through taught first aid training courses, and to increase the number of people that associate the Red Cross with first aid.
- ***Does the National Society have a good reputation with the local population?*** In order for the First Aid App to be a success, it is important that the local population is both aware of and trusts the National Society. The public are unlikely to download an app from an organization that they have not heard of and do not trust. This study found that in the majority of participating countries, the public have a high level of perceived trust in the Red Cross. Furthermore, some National Societies included in this study felt that having the app would help enhance their reputation with the local population and to demonstrate their timeliness with emerging technologies.

The characteristics of the local population

- ***Does the population have access to suitable smartphones to download and use the app?*** As an Android or iOS device is required to download the app, National Societies should investigate the country's smartphone penetration rate to identify if there is likely to be a demand for a First Aid App. An Internet connection will also be required for users to be able to download or share the app.
- ***Are there any competing apps available in the country?*** The availability of existing apps is not a reason to prevent a National Society from joining the Universal App Program. The availability of existing first aid apps can provide a National Society with inspiration on how to promote their own app and provide a benchmark for measuring the success of the app.

The recommendations provided below have been designed to support those National Societies that have decided to participate in the Universal App Program. However, the successful implementation of these recommendations will require effective collaboration between National Societies and the GDPC.

5.2 THE APP DEVELOPMENT PROCESS

Providing RCRC National Societies and the GDPC with advice and recommendations on the app development process requires an understanding of the major challenges faced by National Societies participating in the Comparative review of the First Aid App. Table 6 provides advice and recommendations for overcoming the main challenges RC societies face during the process of developing and adapting the app to their local context.

Table 6: Overcoming the challenges faced during the app development process

Challenge faced	Recommendations
Time management	• Watch the Mobile Application Development Cycle video that the GDPC has made available on YouTube.[29] This will provide clarity on what is involved in the app development process and the timescales involved. In addition, access the resources that the GDPC has made available on the Prepare Center website to support National Societies in the development, testing and rollout of the First Aid App. • Before starting the app development process, consider the key objectives and target audience for the app. Considering these throughout the development of the app, will help to ensure that time is used efficiently to meet these objectives. • Create a list of the changes required to adapt the First Aid App to your local context. This will provide an initial understanding of the tasks involved during the app development process. • Set expectations by creating a list of the tasks involved in developing the app (e.g., editing content, translation, testing) and assign realistic timescales to each task. Comparing this information with the time that staff have available to develop the app will enable shortfalls to be identified. It is important to acknowledge that certain tasks (e.g., translation, developing the app in multiple languages) can require a significant amount of time or expert knowledge. • Plan for delays and unexpected issues that may arise requiring additional time for app development. This contingency planning and flexibility will enable delays to be anticipated, without impacting the overall app development timeframe. • Review the time taken by National Societies participating in the Comparative review of the First Aid App for app development. This will provide an indication of the time taken to develop the app and some of the challenges that resulted in delays to the app development process. Identifying the challenges faced by other National Societies will enable these to be avoided. • Consider that time beyond the development of the app will be required for the roll-out, launch, continuous promotion and updates of the app. For example, National Societies participating in this study recommended the inclusion of a newsfeed in the app that could provide

[29] Global Disaster Preparedness Center (GDPC), *GDPC Universal App Program – Mobile Application Development Cycle,* YouTube channel for the Prepare Center, 14 July 2015.

Challenge faced	Recommendations
	information on local threats and weather reports.
Resource constraints	• Establish relationships with other RC societies in order to facilitate collaboration and mutual support in the app development process. To increase the transferability of resources and lessons learnt, liaise with National Societies similar to your own in terms of language and context. • Identify your own resource constraints and the resources that your National Society could provide to others. For instance, could another National Society provide you with advice on developing an app in different languages? • Harness the value of existing staff and volunteers in testing the app for any problems (e.g., bugs, a lack of clarity). This can include staff from both national and local branches, particularly those involved in first aid training activities. Utilizing staff and volunteers both identifies any issues to be resolved before launching the app and encourages their buy-in to the app, which will be valuable during the launch and promotion of the app.
Language issues	• Investigate whether there are any legal or political requirements for the app to be developed in multiple languages in your country. If not, in the first instance, focus on providing a version of the app in the country's primary national language. Once this version has been finalized and launched, resources could be spent on developing versions of the app in additional languages if required. • When developing versions of the app in other languages, start with short demonstration versions at the beginning of the development process. This will enable the compatibility of different language fonts to be tested on different devices. Identifying any problems early on will minimize the time wasted and enable realistic deadlines to be set. • If resources are not available for the translation of the app, identify if there are any local organizations or volunteers with a medical background (e.g., medical experts or advanced medical students) that have the necessary domain knowledge and could support the translation of the app content.
Consistency	• Ensure that the content of the app is consistent with local, national and international first aid guidelines and taught training courses. The GFARC will provide support by checking changes in the content of the app in line with IFRC guidelines. In cases of conflict between guidelines operating at different levels, adhere to local guidelines.
Expectations of the CMS	• National Societies should be provided with information in advance on the tasks that can and cannot be performed by the CMS. In addition, this information should be clearly stated on the CMS interface. The welcome packet on the GDPC Prepare Center website provides information on the CMS used for developing and updating the First Aid App.[30]
Centralization and cohesion of the app development process	• The CMS and Prepare Center website facilitates the sharing of resources, knowledge and lessons learnt. National Societies participating in the Universal App Program are able to share their resources (e.g., videos and images) through the CMS. The inclusion of a forum on the CMS or Prepare Center website would enable National Societies to ask/answer any questions on the app development process and to establish relationships with one another.

[30] Global Disaster Preparedness Center (GDPC), *Content Management System (CMS) - Overview*, no date. [Online] http://preparecenter.org/sites/default/files/cms_overview_first_aid.pdf (Accessed 25 February 2016).

5.3 ROLLING OUT AND MARKETING THE APP

Following the development process, the Mobile Application Marketing Toolkit: Best Practices & Guidelines document provided by the GDPC, recommends that National Societies develop a clear and instructive marketing plan for rolling out the app to their local community. [31]This study has revealed that some National Societies do not develop a comprehensive marketing plan and thus further attention is required in this area. This section provides advice to National Societies in rolling out and marketing the app.

- **Learn from the good practices of other National Societies**

This report includes advice and lessons learnt from National Societies that have rolled out the First Aid App in different contexts. National Societies in other countries can learn lessons from the existing marketing activities that have been used to roll out the app. The creation of a forum on the CMS or Prepare Center website would facilitate this sharing of good practices by enabling National Societies to both share and learn lessons on what activities have been most successful in rolling out and marketing the First Aid App.

- **Review the materials provided by the GDPC**

The Mobile Application Marketing Toolkit: Best Practices & Guidelines[32] provides valuable information on developing a strategy and marketing plan, implementing the strategy, the communication options available and tracking the results of the marketing activities. In addition, the guidelines provide National Societies with information on promoting their app via social media, traditional media, through events, and by using a press release, and on how App Store Optimization and AdMob can be used to improve the ranking of the First Aid App in an app store.

- **Develop a marketing plan**

The GDPC Mobile Application Toolkit recommends that a marketing plan includes information on the six areas outlined in Table 7. Recommendations and key insights from this study are also provided in Table 7.

Table 7: Content to be included in a marketing plan

Audience	In order to effectively promote the app, it is important to understand who the target audience of the app is. If the app is targeted at everyone, it is important to recognize that different dissemination channels will reach different groups of the public. This study has revealed that some National Societies have segmented their audience, thereby enabling them to more specifically target their marketing. Segments of the public that have been targeted include: • Young people / school children • Companies • First aiders • Volunteers • Tourists (e.g., beach goers) • Friends and family Section 4.5.1 on the findings from Google Analytics highlighted how

[31] Global Disaster Preparedness Center (GDPC), *Mobile Application Marketing Toolkit: Best Practices & Guidelines*, no date.
[32] Ibid.

	some National Societies limit their marketing activities to the areas surrounding the National Society Headquarters. However, as the population living in more remote rural areas may have a greater reliance on their own first aid skills, due to slower ambulance response times, National Societies should consider opportunities to promote the app to these areas. Reaching all groups of the public will require multiple marketing activities with different costs associated with each activity. Segmenting the target audience by different characteristics (e.g., age, location, interests) and focusing on promoting the app to particular groups will enable resources to be targeted more effectively. Further groups that may be targeted with information on the First Aid App include: • Organizations that are not currently participating in taught first aid courses. For instance, information on the app could be provided to large companies to share with their employees • Related agencies who may use the app in their day-to-day work (e.g., health authorities) • Individuals that are likely to influence others, for example on social media or through blog articles
Goals and objectives	Identify what you want to achieve with your marketing plan. This can be related to: • The public's use and engagement of the app • The type and number of marketing activities used to promote the app • The reach of the marketing activities Measurable objectives enable the effectiveness of the marketing plan to be measured. Many National Societies set an objective of reaching a particular number of downloads, which enables them to measure the effectiveness of their marketing strategy. Information on the number of smartphone users in the country and reviewing the number of downloads achieved by similar apps can inform the development of this objective to ensure that the objective set is realistic.
The content that will be created to promote the app	The content that can be developed to promote the app includes: • Written text • Photos and images • Videos The GDPC Mobile Application Marketing Toolkit provides information and guidance on developing content for social media (e.g., applications (Facebook, Twitter, etc.), blogs and e-mail marketing), traditional media (e.g., posters, brochures, television), press releases and events. The content developed should focus on the benefits of the app, including (but not limited to): • It being freely available • That once downloaded, it is accessible at all times (with or without Internet access) • That the use of the app could save a life • The use of videos and quizzes makes the app interactive and engaging It is important that any content created to promote the First Aid App also includes a link that can be used to download the app.

	This study identified a number of examples of how use of the First Aid App had saved lives. National Societies can use these examples as case studies to promote and encourage further downloads and use of their app. However, personal information and stories relating to members of the public or organizations should not be used without their prior consent.
A plan of action for achieving the goals and objectives	The communication channels used to promote the app should be based on the target audience identified. As outlined in Section 4.4, communication channels include: • Online (e.g., social media, websites) • Face-to-face activities (e.g., school visits, first aid training) • Advertising on television and radio • Printed materials For some National Societies, it is necessary to make the First Aid App available in multiple languages so that the information is accessible to groups that do not speak the national language (and in some countries there are several national languages). Communication materials should also be developed in each language that the app is available in to ensure that the target audience is able to understand the content.
Tracking and measuring the impact of your marketing activities	Tracking and measuring the impact of marketing activities is important to understand how effective the strategy has been in meeting the objectives set and to identify whether there is a need for the strategy to be modified. Section 5.4 below outlines how usage and engagement of the app can be tracked and measured.
The time and budget available	What time and budget is available to roll-out and promote the app? This will have implications on the marketing activities that can be implemented. There is the opportunity to take advantage of free communication channels to promote the app, including (but not limited to): • Social media (e.g., Facebook, Twitter, blogs) • National Society website • Press releases to newspapers, local television and radio stations and online blogs • E-mail footers • Tailored e-mails • Events (e.g., World First Aid Day) • School visits • First aid courses This study highlighted how some National Societies are using Google Ad Grants to promote their app.[33] Google Ad Grants provides qualifying non-profit organizations in 50 countries with $10,000 USD of AdWords advertising each month. In addition, there may be opportunities to partner with companies to promote the app or to receive sponsorship towards the cost of the marketing activities. Partnerships could be made with[34]: • Fundraising partners

[33] Google Ad Grants, *See if you're eligible*, no date. [Online] https://www.google.co.uk/intl/en/grants/eligibility/ (Accessed 18 January 2016).
[34] British Red Cross, *Communications Plan*, 2012.

	• Health partners • Schools, colleges and universities • Mobile phone manufacturers • Mobile phone operators • Mobile phone retailers

As the effectiveness of the different marketing activities are understood, it is important that the marketing plan is updated.

- **Consider innovative ways of launching and promoting the app**

In order to increase the reach of marketing activities surrounding the launch of the app, when possible promote the app in relation to an existing event or news story with a high profile (e.g., World First Aid Day, the anniversary of the National Society). A press conference could be held to promote and provide a demonstration of the app. Find innovative ways to promote the app. For example, if budget is available, design a t-shirt promoting the app and ask first aid instructors to wear them when they teach first aid classes. Generating and making a QR-code available for the app, enables the public to easily and instantly access the app, without having to use a URL. The QR-code can then be included on communications materials, including (but not limited to): posters, billboards and printed materials.

- **Promote the app internally to gain buy-in from RCRC staff and volunteers**

As the success of the First Aid App can enhance the reputation and brand image of the National Society, promote the app and its benefits to staff and volunteers at the national headquarters and local branches in order for them to champion and further promote the app. This can be undertaken via presentations, newsletters, flyers, internal intranet pages and e-mails that encourage staff and volunteers to buy-in to the app and commit (informally) to working towards the objectives set. Recommendations also include:

- If the National Society has a separate marketing department, seek their advice in marketing the app and identify whether the promotion of the app can be linked to any existing marketing initiatives
- Work with the National Society's spokesperson and staff who regularly present the organization's work externally to ensure that information on the app is included in external presentations
- First aid instructors can also be briefed to promote the app by including information on the app in their training (e.g., in PowerPoint slides)

- **Promote the app beyond the launch period**

Many National Societies participating in the study have discontinued marketing activities following the roll out of the app, however, in order to encourage continued downloads and usage of the app, it is important to regularly promote the app beyond the initial launch period. If there is no budget remaining to promote the app, consider using free communications channels (e.g., websites, social media, presentations). There is the opportunity to promote the app in relation to existing events (e.g., World First Aid Day) that occur periodically and in relation to particular milestones (e.g., reaching a particular number of downloads). Additional relevant content can be added to the app in response to specific security incidents. These additions can be used to further promote the app and encourage continued app use. Push notifications to members of the population who have already downloaded the app can focus on them using the app to refresh themselves when they have a spare five minutes, such as when they are making a coffee or are using public transport or can provide information on app content that has been updated.

Understanding the impact of the marketing activities implemented enables National Societies to identify if there are any changes required to their strategy. The next section provides recommendations for tracking and measuring this impact on app usage and engagement.

5.4 TRACKING AND MEASURING IMPACT

Tracking and measuring the impact of marketing activities will enable a National Society to evaluate: [35]

- Whether any budget allocated to promoting the app has been spent effectively?
- If there is a demand for the app?
- Whether the objectives set have been achieved?
- What has worked well?
- What has not worked as well?

The impact of marketing activities on app usage and engagement can be tracked and measured using a combination of Google Analytics and user feedback. Table 9 in Section 5.6 on the criteria for success factors provides further information and metrics on how National Societies can understand the use of and engagement with the First Aid App.

5.4.1 Google Analytics

Google Analytics can be installed to measure the impact of marketing activities for both websites and apps, and provides useful information on the use and engagement with the app.[36] Data from Google Analytics includes:

- The number of downloads of the app. As recommended by the GDPC, this information can be analyzed in relation to the countries smartphone penetration rate
- The number of users of the app, including the retention rate. For example, do users access the app just once or are they repeat users?
- The frequency and recency of use
- The screens that users are engaging with most and least
- The events being used on the app (quizzes and videos)
- The duration of sessions
- The devices that the app is being used on
- The country and city from where the session originated
- Whether particular events or marketing activities have an impact on usage and engagement with the app. For example, users can identify if there are spikes in the number of downloads and sessions following a disaster or particular marketing activity
- The number of crashes of different versions of the app

In addition to using Google Analytics to track the impact of marketing activities on app use and engagement, National Societies can use Google Analytics for websites to investigate if the availability of the First Aid App has any impact on the number of first aid course bookings that are being made from a mobile phone and the number of website visits from a mobile phone.

This study found that many National Societies found Google Analytics complicated, which prevented them from using it to collect data on the use and engagement with their app. The

[35] British Red Cross, *Mobile app project evaluation*, no date.
[36] Google Analytics, *Turn insights into action*, no date. [Online] www.google.com/analytics (Accessed 19 January 2016).

GDPC have made a guidance document available on the Prepare Center website to support National Societies in using Google Analytics.[37] Recommendations are also provided to the GDPC below to further enhance the support provided to National Societies to use Google Analytics to assist them with the evaluation of their marketing activities.

5.4.2 User Feedback

Table 8 provides information on the different sources that National Societies can access to collect feedback on their app. Gaining user feedback on the app will enable National Societies to identify whether users view the app positively or negatively and to address any negative comments and recommendations for improvement. Where possible, and with the user's permission, National Societies could use the positive feedback on the app in their marketing activities. The GDPC encourages National Societies to regularly look at the comments available on Google Play and Apple App Store, and to address any issues raised in negative reviews.

Table 8: Sources of feedback on the First Aid App

Source of feedback	Description
Google Play	User ratings of the app, from one to five stars are provided. For example, National Societies can identify how many people have rated their app with five stars compared to one star. In addition, user reviews of the app are available indicating user feedback on the app.
Apple App Store	A high-level overview is provided whereby National Societies are able to view the total number of ratings and the overall rating of the app (e.g., 4.5 stars). A small number of user reviews are available.
appFigures[38]	appFigures enables up to five apps to be tracked for free and provides users with information on the number of downloads and the reviews and ratings from both Google Play and Apple App Store for each app.
E-mails from users	Many National Societies participating in this study indicated that they received e-mails from app users with questions and feedback on the app.
Social media (e.g., Twitter, Facebook, blogs)	App users may provide feedback on the app on social media. When the feedback is positive, National Societies have the opportunity to further share this by liking or retweeting the positive posts. Negative feedback can also be addressed by responding to users and indicating whether and how their feedback will be addressed.
Research with app users	Qualitative (e.g., interviews, focus groups) or quantitative (e.g., surveys, usage statistics) research with app users can be used to collect their feedback on the app and any suggestions that they have for improvement. If the National Society lacks the resources to conduct more formal research, there is the opportunity to seek volunteers' views on the app.

5.5 SPECIFIC RECOMMENDATIONS FOR THE GDPC

The implementation of the recommendations requires collaboration between National Societies participating in the Universal App Program and the GDPC. As the GDPC have worked with over 70 National Societies in the development, roll-out and marketing of the First Aid App, they have accumulated a wealth of knowledge that can be shared with other National Societies that decide

[37] Global Disaster Preparedness Center (GDPC), *Using Google Analytics*, 30 July 2015. [Online] http://preparecenter.org/resources/using-google-analytics (Accessed 25 February 2016).
[38] appFigures, *Let the app stores come to you*, no date. [Online] https://appfigures.com/ (Accessed 19 January 2016).

to participate in the Universal App Program. Recommendations specifically for the GDPC include:

- **More widely promoting the GDPC's role in the Universal App Program.** Several interviewees were unaware of the GDPC and their role. This issue could be addressed by the GDPC encouraging the main contact person at the National Society to share information on the GDPC's role in the Universal App Program with all of their colleagues
- **Continue providing guidance to National Societies** already participating in the Universal App Program who are interested in further developing the disaster preparedness content of the First Aid App, or in including content on baby and child first aid
- **Further develop the PrepareCenter.org website or CMS by adding a** forum to enable National Societies to communicate with each other and learn lessons from those that have already launched the First Aid App
- **Develop training material and provide support to National Societies on the use of Google Analytics.** For example, a virtual training session (e.g., webinar) could be held on using Google Analytics for interested National Societies. In the long-term, a training video may also be of use to National Societies
- **As the GDPC does already provide National Societies with information on promoting the app beyond the launch period, further engagement is required to encourage National Societies to continue promoting the app**. This could involve the use of awards to recognize countries that have used innovative marketing activities to promote the app. Additionally, as limited resources (e.g., time and financial) can act as barriers to the continued promotion of the First Aid App, the case studies that the GDPC share on promotional strategies used by National Societies should place greater emphasis on how to promote the app with limited resources
- **Consider commissioning further research to understand user engagement and experiences with the app** and furthermore, the impact of security related events on the use of the app across different National Societies
- In addition, the GDPC can engage with National Societies to discuss how the following issues identified during this study can be overcome:
    - Although there are no costs associated with National Societies participating in the Universal App Program, interviewees highlighted how significant time was required for adapting the app to the local context. In some cases, as medical expertise was required to translate the app, National Societies performed this task increasing the time spent in adapting the app. Thus, some National Societies felt that more time for adapting the app should be allowed. National Societies also indicated that they lack the financial and human resources to continue updating, promoting and monitoring the use of the First Aid App
    - In addition to being perceived as complicated to use, Google Analytics is not used by National Societies due to a lack of time. The CMS and Google Analytics being separate programs and each requiring login information was also viewed as a barrier to the use of Google Analytics
    - In versions of the app with multiple languages, the app uses a master language in the start menu, however, an interviewee would prefer if users could select the start language of the app themselves
    - Although the problems with displaying Hebrew characters has now been resolved, interviewees expressed concerns over similar issues when developing versions of the First Aid App in particular languages

- The sharing of resources across multiple National Societies would be easier if they were developed so that they could be used in any country
- Despite the availability of the Mobile Application Marketing Toolkit, National Societies are unsure of how they should promote the First Aid App beyond the initial launch period. This relates to not having a key message to promote the app once it has been launched and National Societies having limited budget for promoting the app
- In one country, the app was viewed as being too large and taking up too much space on people's phones

5.6 CRITERIA FOR SUCCESS FACTORS

As identified in the lessons learnt section, for many of the National Societies involved in this study, dedicating resources to measuring the success of the app is very difficult. As a consequence, the majority of attention is placed on the number of app downloads. While this can provide some degree of success, there are other criteria that can help to understand how well the app is doing. This section examines three different types of criteria related to measuring success: 1) user engagement with and perspective of the app; 2) criteria related to the host organization, and 3) criteria related to the country that the National Society is operating in.

5.6.1 User engagement with and perspective of the app

Table 9 provides criteria for success factors related to the user's engagement with and perspective of the app. The criteria are included for National Societies to consider using to widen their understanding of the initial uptake of the app, as well as the long-term engagement with the app. Due to resource constraints (time, staff and expertise), these criteria are categorized as being essential or optional. It is recommended that National Societies spend some time to periodically understand user engagement. Such an understanding may help inform future marketing efforts, as well as attempts to alter and further develop the app.

Table 9: Measuring app quality, app uptake and user engagement

ACQUISITION		
Criteria	*Essential/ Optional*	*Advice on measurement*
# of downloads	Essential	The number of downloads should be measurable and realistic based on the characteristics of the local population (i.e., size, demographics, mobile penetration rate etc.). This metric should be pre-defined prior to rolling out the app, preferably when developing the marketing strategy. If possible, metrics should be defined for different periods to ensure continued measurement over time. **What to use for measurement: Google Analytics** *Please note: Some users may gain access to the app via file sharing software as seen in Myanmar. It is therefore worth considering if there is a way of measuring this type of sharing.*
App discovery	Optional	This criterion should help National Societies understand how users discover the app. This is a criterion that can be monitored to help the organization understand the success of advertising approaches:

		• Percentage of users attracted via search engines • Percentage of users attracted via social media sites **What to use for measurement: Google Analytics** *Please note: this measure may be inaccurate since people may have heard or read about the app elsewhere (e.g., on billboards, or in printed publications etc.). In these cases, app discovery would be "non-electronic". This matter may be partly mitigated by including QR-codes in the printed media which include the source of referral in the link to the app download site.*
ENGAGEMENT		
Criteria	*Essential/ Optional*	*Advice on measurement*
# of users	Essential	Over time, the number of users is likely to alter as people may download the app but never use it. In addition to the initial number of downloads, it is worth keeping track of the number of users over time. This will enable National Societies to understand the impact of its marketing approaches as well as real-time events on app uptake. **What to use for measurement: Google Analytics**
Session length	Essential	No metric required. It can be useful to understand how long people use the app. This can help to understand if the content is digestible and/or whether the time spent is too short in order for the user to adequately gain value from the content of the app. **What to use for measurement: Google Analytics**
Donations made	Optional	If it is possible for users to make financial donations via the app, it is worth understanding how often this facility is used. This can inform future marketing operations in terms of fundraising, where it might be suitable for fundraising to be focused via donations made by the app as an option. **What to use for measurement: Google Analytics – specifically, Google Analytics may enable the user to understand how many times the donate screen has been viewed. If set up, Google Analytics will also enable the user to track the amount of donations received through the app and the user's billing location.**
National Society website visited	Optional	It may also be possible to understand whether the app is influencing users to visit the National Society's website. Such a criterion is useful for understanding the wider impact of the app in building greater awareness about the organization. National Society websites can be linked to the app and direct access from the website to the app can be monitored. **What to use for measurement: Google Analytics → Conversions → E-commerce→ Product performance**
First aid course booked	Optional	If included in the app, it may be useful to understand whether the app is driving uptake of and/or interest in first aid courses. **What to use for measurement: Google Analytics – the number of times a link is selected that informs the user about first aid courses. In addition, National Societies could ask people how they found out about the first aid course upon registration.**

Popular first aid topics	Optional	Understanding the app users' preference in first aid topics may provide National Societies with further information on what areas of first aid should be given greater priority. If this is in conflict with the risks facing the local population, it may be useful to understand such discrepancies. **What to use for measurement: Google Analytics – screen metrics**
Popular preparedness areas	Optional	Understanding the app users' preference over preparedness areas (e.g., earthquake, everyday emergencies, grab bag) may provide the National Society with further information on what areas of preparedness should be given greater priority. **What to use for measurement: Google Analytics – screen metrics**
RETENTION		
Criteria	*Essential/ Optional*	*Advice on measurement*
User type	Essential	National Societies can identify what proportion of visits are by a new user vs. a returning user. A high proportion of sessions by returning users suggests a higher retention rate and that users continue to like and are engaged with the content of the app. **What to use for measurement: Google Analytics – Information on user type can be found by selecting the following menu options: Audience → Behaviour → New vs Returning**
Loyalty	Optional	Understanding how many times each user is using the app, provides an indication of how popular the app is with users and whether there is a need to change the content of the app in order to retain a higher proportion of users. **What to use for measurement: Google Analytics – Information on loyalty can be found by selecting the following menu options: Audience → Behaviour → Loyalty.**
Recency of session (i.e., days between sessions)	Optional	Gaining knowledge on the number of days in between the multiple sessions that users have had on the app, will provide National Societies with information on how frequently users are accessing the app and an indication of when users curtail their use of the app. For example, a high proportion of first sessions with no repeat sessions would suggest the need to make changes to the app. **What to use for measurement: Google Analytics – Information on recency can be found by selecting the following menu options: Audience → Behaviour → Recency.**
Length of app use by users	Optional	Understanding how long users spend engaging with the app, may provide National Societies with further information on the long-term use of the app. **What to use for measurement: Google Analytics – session length.**

QUALITY METRICS		
Criteria	*Essential/ Optional*	*Advice on measurement*
Ratings in app stores	Essential	Understanding the views of those using the app can be useful in knowing the sentiment surrounding the app. The app may be perceived as being useful, provide testimonials for advertising purposes, provide information on content that may not be working. Metrics to examine can include: • Sentiment expressed • Topics mentioned • User ratings **What to use for measurement: visit app stores for compatible devices and manually collect and examine feedback. One such program that may assist in this exercise is appFigures.[39] However, a paid account with appFigures may be necessary to do so. If time allows and expertise is available, it may be useful to conduct a content analysis of the review content in order to provide a more comprehensive understanding of user feedback.** *Please note: In many cases using automated text mining and analytical tools for analysis may not be recommended because the limited amount of written feedback renders such analysis ineffective and unnecessarily expensive. If however, the amount of feedback is considered extensive enough for analytic tools, these could be explored.*
Crashes	Essential	Understanding the number of crashes that are taking place during the use of the app is essential in the long-term use of the app. Crashes should be monitored and examined in relation to: • Operating system • App updates **What to use for measurement: Google Analytics – under the behavior tab, information is provided on crashes. Information on the number of crashes is provided for each version of the app.**
Feedback from users	Optional	Understanding the users experience of the app is useful for any ongoing marketing and content development that may take place in order to keep the app up-to-date. Areas of consideration could include: • Understanding – is the content understandable? • Engaging – is the content engaging? • Improvements: How could it be improved? Pictures? Videos? **What to use for measurement: discuss the app with first aid course attendees – the use of a questionnaire or semi-structured interview or group discussion may help to collect this form of valuable data.**
User results from the app quizzes	Optional	The number of users that win or lose on the apps' quizzes can provide an indication of the quality of the information on the app and whether users are learning anything from using the app.

[39] See: https://appfigures.com

		Additionally, finding out which quizzes garner the most wins and losses reveals what aspects of first aid users are most familiar with. **What to use for measurement: Google Analytics – Information on the wins and losses from taking a quiz can be found by selecting the following menu options: Behaviour → Events → Overview → Event Category (Quiz).**

5.6.2 The host organization

The host organization and their strategy, resources, commitment, and goals can also have an impact on app success. Table 10 outlines the criteria for success factors related to the host organization. Some of these criteria are qualitative in nature, making it difficult to identify suitable metrics to measure the success of the app. Nevertheless, these aspects should be taken into account, as has been the case in this project via qualitative methods such as interviews.

Table 10: Criteria for success factors related to the host organization

Commitment		
Criteria	*Essential/ Optional*	*Advice on measurement*
Resources allocated to the project	Essential	Resources should be analyzed (a) qualitatively, e.g., by taking into account the qualifications of local experts and volunteers participating in the project (e.g., the degree of medical expertise), and (b) quantitatively, by considering the available budget for the project. Since the app will have to be updated during its lifetime, the analysis should not only focus on resources available during the development and launch phase, but also during the entire First Aid App life cycle. **What to use for measurement: Identify the local budget and experts and volunteers participating in the project and their expertise (e.g., medical or technical).**
Planned degree of customization	Essential	Adapting the app to the local context is crucial for success and should include at least the following three essential activities (where relevant): • Translation of the app into the official language(s) of the host country, with translations being performed either by medical experts or by translators specialized in medical translations • Comparing the app's content with local requirements / first aid guidelines, and development of a strategy outlining how to deal with any discrepancies that have been discovered • Deleting unnecessary / unsuitable content of the app (if applicable), and adding localized content on specific threats **No measurement, but a qualitative review of the final version of the app by both International and local experts is recommended.**

Local support in testing the app	Optional	Test users involved in the project: - Ordinary people as test users - First Aid Instructors as test users **How to measure: number of test participants for the two categories mentioned above. Drop-out rate during tests.**
Communication infrastructure of the host organization		
Criteria	*Essential/ Optional*	*Advice on measurement*
Dissemination channels	Essential	Analysis of the existing dissemination channels controlled by the host organization. This can refer to: Print publications (e.g. magazines for members), online media (number of followers on Twitter, YouTube, Facebook), and face to face marketing (courses, events). **What to use for measurement: Identify available communication channels controlled by the host organization and analyze their impact (e.g., number of readers, followers).**
Feedback channels	Essential	Analysis of available infrastructure for collecting and managing user feedback (e.g., telephone hotlines, e-mail contact points, forums managed / moderated by the host organization, chats etc.). Identification of suitable processes outlining how to deal with customer feedback (and, in particular, with user complaints). Pre-launch: Identify suitable contact points, and establish a complaint management process. **How to measure: Post-launch: Analysis of incoming user feedback (quantity and content), analysis of the organization's response time for responding to user feedback.**

The trust that users have in the host organization may also influence app uptake and success. However, as the app will always be promoted via National Societies, there is usually no choice between different distributors in this particular case. Additionally, the reputation of National Societies is usually positive, and therefore not likely to be a major issue with regard to the roll out and uptake of the First Aid App.

5.6.3 The host country

Finally, the success of the First Aid App may be influenced by the context of the host country, as highlighted in Table 11. Here, three key aspects need to be taken into consideration: connectivity, the availability of competing First Aid Apps, and the local threat level. The first aspect relates to the availability of the communication tools and infrastructure, the second aspect to the local market for First Aid Apps, and the third aspect is based on the data analyzed during this study which indicate that security/safety incidents have the potential to drive app downloads and use. In some very specific cases, political issues may also have an impact on app success.

Table 11: Criteria for success factors related to the host country

Infrastructure of the host country		
Criteria	*Essential/ Optional*	*Advice on measurement*
Connectivity	Essential	The following data could be used for an analysis of the communications infrastructure (if available): • Number of smartphone users, or alternatively, of mobile Internet subscriptions (3G or better) in relation to the population • Share of the population having access to fixed Internet connections / Wi-Fi • Costs of Internet usage related to average salaries • Regional coverage of mobile / stationary Internet (% of surface area): might be of interest post-launch if the host organization wants to send incident-related push notifications **What to use for measurement: Statistics provided by telecommunication organizations or regulatory bodies (if available). If Internet access is unsatisfactory or expensive, check for alternative ways of sharing the app, e.g., tools for sharing apps peer to peer (and their availability in terms of users / downloads, to be gathered from app stores).**
Local First Aid App Market		
Criteria	*Essential/ Optional*	*Advice on measurement*
Availability of competing apps	Essential	The following data on the local app market will indicate the: • Number of First Aid Apps that are already available • Downloads achieved by existing First Aid Apps **How to measure: Analysis of the Apple App Store and Google Play data.**
Price/quality ratio of competing apps	Optional	The following aspects of competing apps should be analyzed: • Are any of these apps provided for free? • What is the quality of existing (free) apps? • Do they cover all official languages in the country? **How to measure: Expert reviews for quality. All other data (price, languages) is available on Google Play or in the App store.**
Threat level in the host country		
Criteria	*Essential/ Optional*	*Advice on measurement*
Threat level	Optional	This analysis may be used to understand how the threat level influences use and engagement of the app. This can include analyzing user engagement of the app in relation to the: - identification of natural risks - identification of man-made risks - identification of security threats **How to measure:** **Pre-launch: Number of existing risks / threats and analysis of**

		historical frequency of incidents / number of victims (using databases such as, e.g., EM-DAT). **Post-launch: analysis of the impact of incidents on app downloads and usage (via Google Analytics)**

Political issues in some countries may also result in the state restricting Internet and / or app use due to political concerns (censorship and government control). It cannot be totally discounted that providing an International app that includes a push notification functionality may raise "security concerns" among local authorities / regulatory bodies. However, this aspect is not very likely to appear, and if so, will be limited to very few countries (e.g., Cuba, Iran, North Korea).

5.7 RECOMMENDATIONS FOR FURTHER RESEARCH

This study has examined the impact of the host organization (i.e., National Society) on the rollout and uptake of the First Aid App. The key insights gained have led to a number of areas that would benefit from further research, including:

- **Research with app users**: Although the secondary analysis of Google Analytics data and user ratings and reviews provide insights into user's perspectives of the app, direct research with app users would provide a more in-depth understanding of their views of the app, the first aid knowledge that they had gained from the app, and the impact the app has had on their first aid attitudes and behaviors. Research with users of the app could be used to:
    - *Supplement the data available on Google Analytics:* with an understanding of the average session length and screens most viewed gained from Google Analytics, research can be undertaken directly with app users to understand why they access and spend longer on particular screens. Research can also be used to understand whether users retain the knowledge that they have gained from using the app
    - *Understand the risk perception and preparedness of app users and how this influences their use of and engagement of the app:* research could be used to examine whether there is increased use of the app by individuals facing higher levels of risk or to determine whether there is a relationship between the preparedness of the user and app use
    - *Examine usage differences based on demographic characteristics:* some of the data available on Google Analytics was identified as not being representative of what it should be analyzing, for example, the data relating to demographics. Further research could be used to identify if there are any usage differences based on demographic characteristics such as age, gender or occupation

- **Research examining the relationship between first aid topics and particular critical events**: analysis of how different types of critical event impact upon app use and engagement could be used to support National Societies in developing app content, additional features (e.g., warning notifications), and in promoting the use of the app prior to and during critical events. The event analysis detailed in Section 4.5.1 focused on three different types of event: 1) short-term events (e.g., cyclone), 2) long-term events (e.g., monsoon flooding), and 3) short-term events with long-term repercussions (e.g., stabbing incidents). Research on extended user engagement with the app during different types of critical event could be undertaken to understand how the type of event

influences the length of time that people feel at risk. The first aid topics that users engage with during critical events may also reveal how different cultures perceive risk and any relationships between first aid topics.

This study has shown that the engagement and buy-in of National Societies into the Universal App Program is important to the success of the First Aid App. The First Aid App provides National Societies with a unique and modern resource that they can use to help drive first aid related preparedness within the local population, as well as to bolster their own reputation. A significant amount of time is needed to develop the app, however, further time and attention is required to roll out and measure/understand user engagement with the app in both the short and long-term. The recommendations and criteria for success factors included in the report aim to support the GDPC and National Societies in rolling out, understanding and taking action to engage audiences with using the app. Such guidance should be used in tandem with advice already provided by the GPDC under the Universal App Program. First aid is a vital tool in an emergency and can be delivered by laypersons in the community. The proper application of first aid procedures also contributes to reducing secondary injuries or complications in victims, thereby reducing morbidity and enhancing the faster recovery of victims. Through partnerships with the GDPC and National Societies, the First Aid App has the potential to be a great resource for increasing people's knowledge of first aid and improving disaster resilience.

ANNEX A: INTERVIEW GUIDE

The following interview guide was used for the country based studies.

ABOUT THE INTERVIEWEE	
1.	What is their role in the organisation?
2.	What roles and responsibilities do they fill in relation to the First Aid App?
3.	What do they think about the app?
4.	Who are the target community(s) for using the app? • *Prompts:* o *Do they use the app?* ▪ *Do they encourage other household members, friends and family to use the app?* o *Do their colleagues use the app?* o *Do volunteers use the app?* o *Local community?* ▪ *Specific community groups, demographics?*

Expectations around the First Aid App Program	
5.	Why did you join the app program?
6.	What were your expectations from developing the first aid app for your country? • *Prompts:* o *Did you expect the app to serve a particular benefit to the community?* o *Did you expect the app to serve a particular benefit to the organisation?*
7.	Are these expectations being met? • If not, why not?

Their view of the 'purpose' of the First Aid App for the organisation and their relationship with target communities	
8.	Do the target communities have a trusting relationship with the organisation? *If there is more than one target community (see question 8 – people ask this question for <u>each</u> target community).* • Is this monitored/measured by the organisation? If so, can this information be shared with the research team?
9.	What benefits does the app provide to the target community?
10.	How does the app support the work of the organisation? • What first aid related goals does the app support? • Does the app support any other goals of the organisation?

Customisation and testing of the app	
11.	Can you tell us how the app was customised and tested? • *Prompts:* o *How was the app customised to the host organisation? (e.g., language, text, functionality/design, content?)* o *Was the app tested? If so, how?*

Rolling out the app	
12.	Does the organisation have a strategy for rolling out the app? • If yes, please explain this strategy. • If no, why not?
13.	What is being done by the organisation to roll out the app? • *Prompt:*

	○ *Marketing efforts – are adequate funds set aside?* ○ *Incentives* ○ *Integration of the app into first aid training courses and exercises* ○ *Marketing the app in relation to key dates/events*
14.	Are users provided with support for using the app? • If yes, how? ○ *Prompt: Are there any forms of support that are more popular than others? Training? Exercises?* • If yes, has this been used? To what extent? • How satisfied were users with the support?
15.	Are users encouraged to continue to use the app? • If yes, how and how often? Are any incentives used? • If no, why not?
16.	How have the organisation's activities to encourage use of the app impacted user behaviour?
17.	To what extent does the target community have access to: • Smartphone to run the app? • 3G, 4G, Wi-Fi signal to download the app and app updates?
18.	Are there any particular threats in the community that would help drive user engagement with the app?
19.	Are there other similar apps on the market that you are competing with? • If yes, what are they? • Do you know how popular they are?
20.	Do you collaborate with other organisations in the provision of First Aid training? • If so, have there been any discussions concerning other organisations incorporating the first aid app as part of their training?

Measuring success	
21.	For your organisation, what makes the app a success in terms of use and uptake by the target community? • Does the organisation try to measure this 'success'? ○ If so, how? ○ If no, why not?
22.	How does the organisation measure user engagement with the app?
23.	What does your organisation measure to evaluate user engagement? • If yes, what metrics? ○ *Prompts:* ▪ *Acquisition – downloads, how users find out about the app?* ▪ *Engagement – active users, session length, goals completed?* ▪ *Retention – the app's continued popularity* ▪ *Quality metrics – ratings, crash reports* ▪ *Manual feedback – user reviews/evaluations* • How is the app performing? • How often is user engagement measured and evaluated? • If no, why not?
24.	Does the organisation gather user feedback? • If yes, what type of feedback do you gather? *(Prompt: reviews, data, direct interaction with the community?)* ○ Is the information useful? ○ Does the organisation respond to user feedback? • If no, why not?
25.	Does the organisation know the preparedness levels of their community? • *Prompt:* ○ *Is the community perceived as being well prepared?* ○ *Is the community interested in personal preparedness?*

	○ *How is this being assessed?* ▪ *If no, why not?*
26.	Does the organisation know the risk levels of different types of threats within their community? • If so, what are the main risk? How are they measured? • If no, why not?
27.	Does the data stemming from use of the app reflect preparedness levels of the community?
28.	Does the data stemming from use of the app reflect risk levels of the community?
29.	What impact is the app having related to first aid? • *Prompt: Is there evidence to suggest that the app is driving first aid training and/or the sale of first aid products? Or is it the other way round?*
30.	What factors do you believe influence the uptake of the app? *(Please explain your answer fully)* • *Prompts:* ○ *Availability of technology supporting the use of the app.* ○ *Cultural factors* ○ *Socio-economic factors* ○ *Demographic factors* ○ *Trust in the host organisation* ○ *Competition regarding the provision of first aid training by other organisations?* ○ *Competition and the availability of other apps* ○ *Influence of specific local threats*
31.	What barriers prevent the app from being a success? • *Prompt:* ○ *Organisational opposition to the app* ○ *Relevance of the app for everyday life is not acknowledged* ○ *Priorities are placed on other applications* ○ *Little information on the availability of the app or where to download the app*
32.	More generally, is there anything you think that could be done to improve the adoption and continued use of the app by the organisation?
33.	Is there anything that the organisation does, that you think works particularly well in encouraging uptake of the app by the target community?

Other	
34.	Based on your own experience, do you have any suggestions/advice for other RCRC organisations interested in developing and rolling out their own app?
35.	Based on your own experience, do you have any suggestions/advice for the GDPC in working with other national societies participating in the program?
36.	Do you have any further comments relating to the first aid app?
37.	Would you recommend that we interview anyone else within your organisation?

ANNEX B: INFORMATION SHEET

Comparative Review of the First Aid App
Information sheet

What is this study about?
You are invited to participate in a research study being conducted by Trilateral Research, Fraunhofer Institute for Open Communication Systems, Utah State University and Asian Disaster Preparedness Centre, entitled Comparative Review of the First Aid App. The project is funded by the Global Disaster Preparedness Center. The project began in September 2015 and will come to an end in January 2016. The purpose of the study is to understand the impact of the host organization on the rollout and uptake of the First Aid App and to provide insights into how the First Aid App can support the delivery of first aid by national societies in order to enhance their community's preparedness.

As part of the study we will conduct semi-structured interviews with host organizations worldwide to ensure a global spread and diversity of organizations interviewed. Accordingly, we would very much welcome your participation in this research.

If you agree to be interviewed, any personal information (e.g., name and contact details) that will be collected from you is for our internal processing and administrative purposes only, and to enable us to contact you if we require further information. Your details will be kept for a maximum period of 12 months following the end of the research project. Unless you prefer otherwise, we will not publish any information in reports or communications materials that would enable you to be directly or indirectly identified.

What will I be asked to do?
You will be asked to answer questions about your organization, the use and engagement of the First Aid app within your community and the success of rolling out the First Aid App. With your permission the interview will be recorded on audio and then transcribed. We estimate that it will take about two hours for you to answer the questions.

What will you use my answers for?
Your answers will be used to provide recommendations to further strengthen and add value to the rollout of the First Aid App. Additionally, the information that you provide may be used to write articles for peer-reviewed journals and magazines, and for presentations at conferences and workshops. Unless indicated otherwise, all information that could either directly or indirectly identify you will be anonymised.

More information?
For more information on the project or about the interviews, please contact Su Anson at susan.anson@trilateralresearch.com.

ANNEX C: INFORMED CONSENT SHEET

Comparative Review of the First Aid App
Informed Consent Sheet - Interviews

I volunteer to participate in this research conducted by Trilateral Research, Fraunhofer Institute for Open Communication Systems, Utah State University and Asian Disaster Preparedness Centre, entitled Comparative Review of the First Aid App. The project is funded by the Global Disaster Preparedness Center. The project began in September 2015 and will come to an end in January 2016.

The purpose of the study is to understand the impact of the host organization on the rollout and uptake of the First Aid App and to provide insights into how the First Aid App can support the delivery of first aid by national societies in order to enhance their community's preparedness. My host organization will be one of 10 host organizations participating in this research.

1. My participation in this project is voluntary.

2. I understand that I will not be paid for my participation.

3. I understand that I may withdraw my data and myself and discontinue participation at any time without any consequences. I understand that I can only withdraw my data from the research before any findings have been published and/or are included in the final report for the study.

4. I understand that I have the right to ask questions and receive understandable answers before making any decision.

5. If I feel uncomfortable in any way during the interview session, I have the right to decline to answer any question or to end the interview.

6. I have been informed of the following:
   - the reason for the interview;
   - the purpose for the collection of any personal information, such as contact details;
   - my rights in relation to that personal information;
   - the subject matters to be discussed

7. I have been made aware of any external use of the research.

8. I would like / not like to review transcripts of the interview upon completion. ***(Please circle the option you choose)***

9. I would like / not like to receive updates on the progress and findings of the project ***(Please circle the option you choose)***

10. The interview will last approximately 60-120 minutes. Notes will be written during the interview. An audio recording will also be made of the interview and then transcribed, unless I indicate otherwise. I have the right to request termination of the audio recording at any time during the interview.

11. I would like / not like to be identified in any reports. ***(Please circle the option you choose)***. [If you choose not to be identified, the researcher will not identify you by name in any reports using information obtained from this interview, and your confidentiality as a participant in this study will remain secure. Subsequent uses of records and data will be subject to standard data use policies, which protect the anonymity of individuals].

12. I understand my right to request access to any, and all, personal information that I have voluntarily provided as part of my participation, and that I may rectify or amend that information if it is inaccurate, or request that all personal information that I have provided be deleted.

13. I understand that Trilateral Research intend on retaining anonymised versions of research transcripts and questionnaires for a period of up to 12 months following the completion of the project.

14. I understand that Trilateral Research intend on retaining my personal contact details for a period of up to 12 months from the completion of the Project where necessary.

15. I agree / disagree to be quoted directly. ***(Please circle the option you choose)***

16. I have read and understood the explanation provided to me. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this study.

17. I have been given a copy of this consent form.

……..	……..
My signature	Signature of Researcher
……..	……..
Date	Date

If you have any questions about this study, please contact: Su Anson at susan.anson@trilateralresearch.com.

Please note: A version will need to be fully executed by both parties – who should then both retain a copy.

Interview Number:
Country …… Number ……