CALM HARM

Riding the wave

pushing through the urge to self harm

ACTIVITY TYPE

Select an activity type:

Comfort

Distract

Express Yourself

Release

Random

Breathe

HMA

stem4
stemming teenage mental illness
supporting teenage mental health
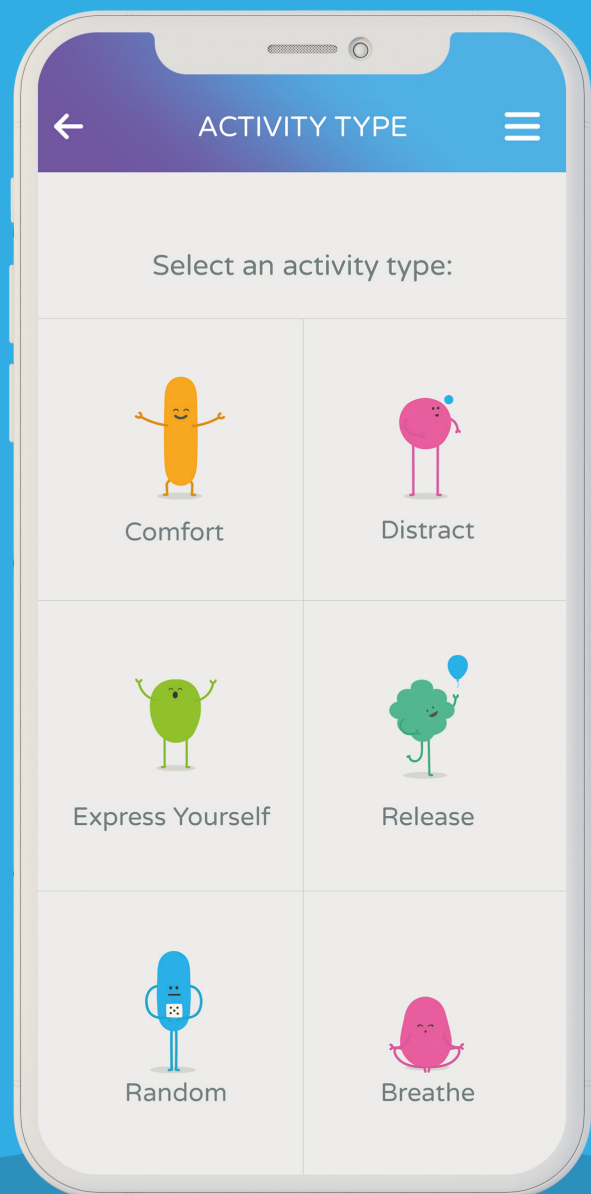
Executive summary

It is estimated that around 13% of children and young people try to hurt themselves on purpose at some point between the ages of 11 and 16. But with extreme pressures on the NHS, many are not getting the help they need with 37% of those referred to mental health services being turned away.

This is one of the reasons tens of thousands of young people are turning to digital tools to help them manage their mental health. But where do they start when trying to find an app to help? Which apps do they trust? How do they know the app isn't going to do more harm than good?

There are 327,000 apps that claim to help us stay healthy or manage our health, but it's estimated that only 15,000 of these are regularly maintained, secure, clinically safe or have met design standards. Whilst there is a wealth of 'mental health' apps on the app store, self-harm is not something that has been tackled by many app designers so there was a big gap in the level of support for those trying to self-manage this issue.

stem4 is a charity which exists to improve teenage mental health by stemming commonly occurring issues at an early stage.

Calm Harm is a free to use app designed for stem4 to help teenagers resist or manage the urge to self-harm. Delivering content that uses the basic principles of Dialectical Behavioural Therapy (DBT), the app was co-designed with teenagers who represented the views of the wider target audience. Engaging in this co-creation process helped inform what would resonate with the target audience - the result being an app with calming shapes, colours and graphics that supports those with urges to self-harm whilst leaving a small digital footprint to maintain anonymity. Underpinning the app is an anonymised data model providing powerful analytics by which to measure effectiveness.
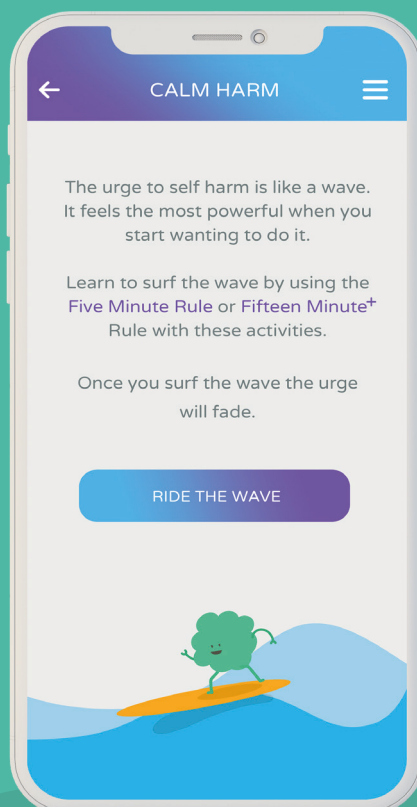
13%

of children and young people try to hurt themselves on purpose at some point between the **ages of 11 and 16.**

OLD DESIGN
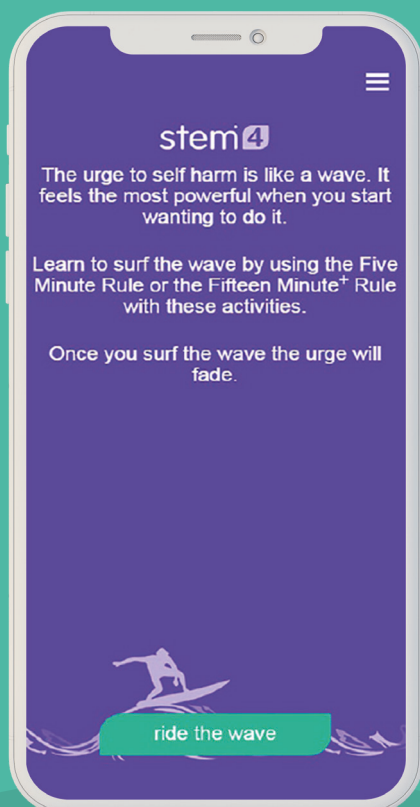
NEW DESIGN

The achievements of Calm Harm have been far greater than we could have ever expected with a 3253% increase in the number of downloads in the 20-month period since launch in April 2017.

The app is one of only 18 mental health apps published on the NHS Apps Library following a rigorous assessment process and has been downloaded 804,717 times globally with 512,605 users using it more than once to manage their urges.

This multi-award-winning app is regularly recognised by its users as being a 'life-saver'.

> "I would like to say a humongous thank you to the creators of Calm Harm. I've used it many times to avoid hurting myself. It has helped massively - I find the coping strategies extremely helpful and they work very well. I also love how easily accessible everything is! It's very organised and quick and easy. Again, a huge thank you to everyone who created this app, you've saved my life, literally!! And I'm guessing so many more. You are the reason I'm still here guys and I will never ever be able to thank you enough!"

Qualitative feedback of this nature is supported by quantitative in-app analytics which demonstrate a 93% efficacy rating (based on users that have reported a reduction in the urge to self-harm after use).

The app has been a game-changer for stem4, positioning the charity firmly in the digital health space, differentiating it from a lot of other small charities working in mental health. The app's success has also provided funders with confidence to support stem4 in the delivery of a suite of apps, the next release being 'Clear Fear' – an app to help teenagers manage anxiety – which will be on the app stores in December 2018.

~~REDACTED CONFIDENTIAL DATA~~

The design of the app has been instrumental in the results achieved. Whilst it has been designed for a clear, focussed target audience, the ability for the user to personalise the experience ensures that it also has a wider appeal and can support those with self-harm urges across a large demographic.

3253% increase in the number of downloads in the **20-month period** since launch in April 2017.
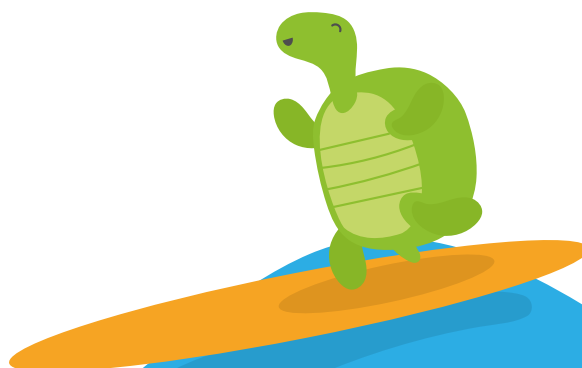
93% of users have reported a **reduction in the urge to self-harm** after completing an exercise.

The app has been downloaded **804,717** times globally with **512,605 users** using it more than once to manage their urges.

Case study overview

The problem in context

There is a shockingly sharp upward trend in the prevalence of self-harm amongst children and young people in the UK; and whilst it is almost impossible to say how many are self-harming, it is estimated that around 13% of young people try to hurt themselves on purpose at some point between the ages of 11 and 16. The statistics are terrifying:

- The recent 'Good Childhood Report' from The Children's Society (published August 2018) estimated that a fifth of children aged 14 (109,000) may have self-harmed across the UK in 2015 - 76,000 girls and 33,000 boys.
- The NSPCC has recently confirmed that it gave 15,376 counselling sessions about self-harm in 2017, the equivalent to 42 per day.
- NHS Digital released data (November 2018) stating that a quarter (25.5%) of 11 to 16-year-olds diagnosed with a mental disorder had self-harmed or attempted suicide at some point, compared to 30% of those who were not diagnosed. In 17 to 19-year-olds with a mental disorder, nearly half (46.8%) had self-harmed or made a suicide attempt.
- The NHS website outlines that more than half of people who die by suicide have a history of self-harm.

If a child or young person in the UK seeks clinical help with self-harm or any other mental health problem, they are referred through their GP to Child and Adolescent Mental Health Services (CAMHS). It has been well publicised that the NHS, particularly CAMHS, is under extreme pressure. In fact, the children's commissioner for England revealed in November 2018 that 37% of children and young people referred to CAMHS were refused help. Only around 14% begin treatment within the recommended four weeks with most waiting over 18 weeks and 32% waiting over a year for treatment following their initial assessment.

It's not surprising therefore that (as reported by The Guardian on 22 November 2018) tens of thousands of young people in the UK who are struggling with their mental health are turning to apps, online counselling and 'mood diaries' to help them manage and recover from conditions that have left them feeling low, isolated and, in some cases suicidal.

So, what does the healthcare app landscape look like? According to ORCHA (Organisation for the Review of Care and Health Apps) which carries out independent assessments of apps for NHS Digital, there are over 327,000 apps claiming to help us stay healthy or manage our health (rising 990% from the 30,000 available in 2013). But only around 112,000 of these apps are looked after, updated and kept fresh. Delving deeper into the evaluation of these, only around 15,000 are secure, clinically safe or have met design standards.

ORCHA estimates that given the number of variables around clinical conditions, and demographic characteristics, there should be at least 30,000 apps available that meet the necessary requirements to help the population maintain healthy lifestyles in a safe manner. So, whilst it seems like a saturated market, there is a real need for good quality, evidence-based apps to support people in various clinical and non-clinical contexts.

With so many healthcare apps available and many that have not been designed with safety or efficacy in mind, user choice is incredibly difficult, particularly for those in distress. There was a clear gap in the market for an app specifically to help people who self-harm. But with so many variables in the nature, timing and severity of self-harm urges, the challenge would be to create something that was flexible enough to personalise and that resonated with the target audience.

1/5
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The Calm Harm story

stem4 is a small, regional charity based in Wimbledon, UK which exists to improve teenage mental health by stemming commonly occurring issues at an early stage such as eating disorders, depression and anxiety, addiction and self-harm. The charity:

- Encourages debate and shares information through a programme of conferences targeting students, head teachers, school leaders, teachers, SENCOs, parents, school nurses and GPs. Educates through interactive conferences for schools and through its comprehensive website.
- Provides self-help tools through apps, website and booklets.

Because of its size, stem4 can only do so much with the limited resources it has in order to have a positive impact on the mental health landscape, so a digital health tool provides a great opportunity to extend the reach of the charity's support far and wide.

The statistics around the prevalence of self-harm, the strain on the NHS and the lack of good quality healthcare apps alongside evidence for the importance of prevention through early intervention in teenage mental illness are all reasons why Dr Nihara Krause (consultant clinical psychologist and CEO of stem4) had an ambition to deliver an intervention at scale to support those that are or thinking about self-harming.

And so, the concept for Calm Harm was born – an app to help teenagers resist or manage the urge to self-harm through supportive, evidence-based Dialectical Behaviour Therapy (DBT) techniques.

In October 2016 when we met Dr Krause, stem4 was participating in an NHS England-funded Digital Development Lab set up to accelerate adoption of digital technologies in mental health. At this point, there was already a minimum viable product* (MVP) for Calm Harm on the app store which had been downloaded 24,000 times. But given the national statistics around self-harm, the charity knew that there was the potential for this app to help a lot more children and young people with their urges, so they needed to identify what was holding it back.

Based on their wealth of experience within the healthcare sector, the Digital Development Lab programme managers identified that the design of the MVP was not fit for purpose and that recreating the app with a focus on design and user experience should be considered to encourage adoption for those that need help. Rapid user feedback sessions validated this opinion with participants stating:

- The colours were too loud and confrontational
- The user journeys were confusing
- There was a lack of consistency with the design
- There were accessibility issues with the colours making some things harder to read
- The 'surfer' logo looked like a witch's hat!

So, early on, the primary focus of the brief was to deliver a more engaging user experience; making the design and visual elements of the app more appealing to its teenage target audience so that they would feel comfortable using it but also perhaps recommend it to others, supporting stem4's mission to foster the development of good mental health in teenagers through enhancing early understanding and awareness, promoting shared early detection and signposting towards prompt action and intervention.

The scope of the work was identified as:

- re-design of the user interface (UI)
- personalisation of the user experience (UX)
- re-build of the app with scalability and information governance in mind.

* A minimum viable product (MVP) is a product with just enough features to satisfy early customers, and to provide feedback for future product development.
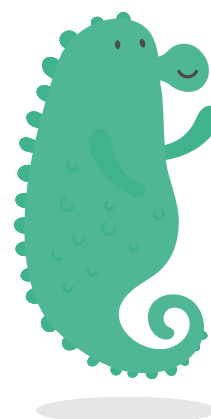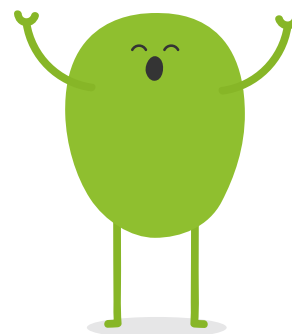
The MVP had very little data to evidence its effectiveness beyond the number of downloads so without any baseline data to inform future objectives, strategic thinking was required to develop the brief and determine how we were going to measure efficacy through the implementation of an anonymised analytical model. We were able to add value in this area from the very beginning, aligning user journeys and designed elements with measurable activity in order to help define the objectives to:

- Develop a widely accessible digital tool which supports over 100,000 individuals in the UK to resist or manage the urge to self-harm (with a specific emphasis on teenage mental health).
- Devise an anonymised analytical model to evidence effectiveness and inform future iterative development.
- Comply with NHS design standards and information governance requirements to facilitate publication on the NHS App Library.
- Raise the profile of stem4 and its work to support teenage mental health to encourage new opportunities and increased fundraising.
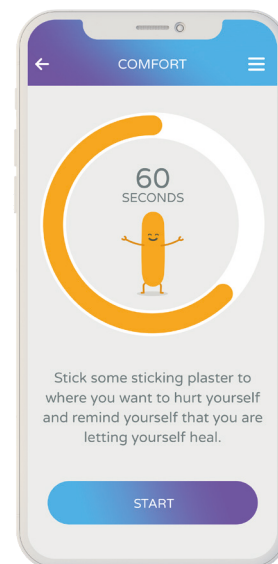
Co-creation and design outputs

When we were commissioned to redesign the app, we placed value in embedding a co-creation process into the strategy. Stakeholders (including stem4, children and young people, parents, teachers, clinicians and clinical safety officers) were brought together to carry out a strategic review of the existing app and co-produce the product road map going forward.

Integral to the co-creation process was the group of teenagers we brought together in a series of user engagement sessions where we looked at desired outputs, user journeys, visual concepts and security/privacy considerations leading to decisions about the user experience and tone of voice.

There were three key outputs from these sessions:

- **Discretion** - It was essential that the principle of anonymity was retained, ensuring the app had a small digital footprint, leaving no lasting internet profile for the user so no personal data is collected, not even an email address.
- **Personalisation** - In times of distress, different things work for different people so from colour schemes to the option to select animal or abstract avatars to manage the urge with you, it was the little things that helped users engage with the app.
- **Simplicity** - The creative needed to be based around calming shapes, colours and graphics.
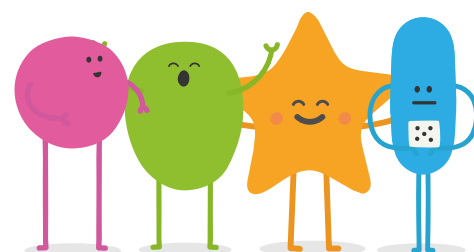
The app (iOS and Android) is based on the notion that 'the urge to self-harm is like a wave - feeling most powerful when you start wanting to do it. Once you surf the wave, the urge will fade.'

Users can learn to 'surf the wave' using five- or fifteen-minute exercises with content based on evidence-based Dialectical Behaviour Therapy (DBT):
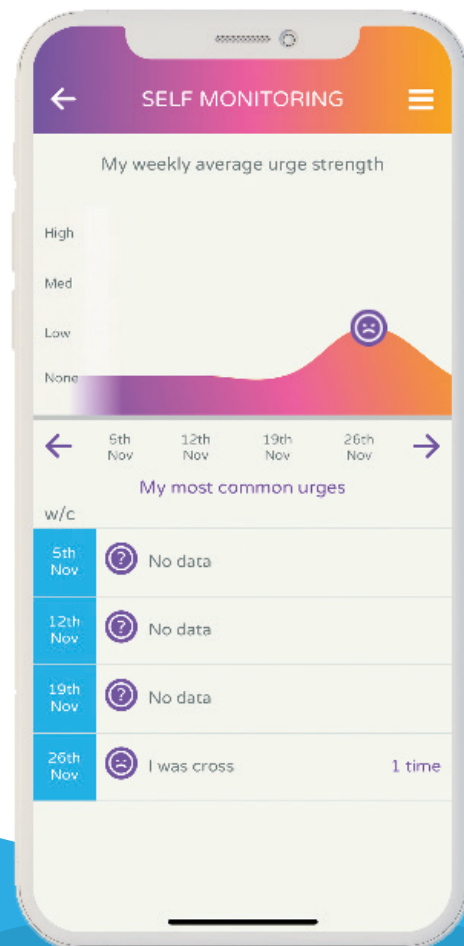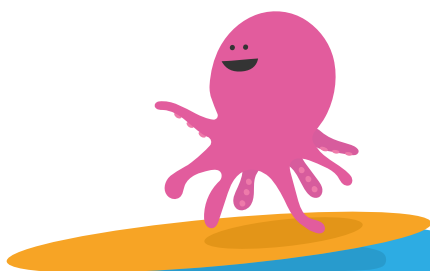
Distract - to combat the urge by learning self-control;
Comfort - to care rather than harm;
Express - get feelings out in a different way;
Release - safe alternatives to self-injury.

Activity is logged and data is presented to the user in a visual graph to help them better understand their urges and more effectively manage them.

The logomark for Calm Harm (also the app icon) was also co-designed with users who wanted to make sure that if the app was on their phone, it would not be immediately apparent that the icon related to self-harm; helping them avoid the stigma of the subject matter.
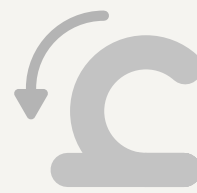
APP ICON

CALM

**HARM**

ROTATE 90º

WAVE

RIDE THE WAVE

NEW LOGO

Undoubtedly, the involvement of the target audience in the process was the key to the project's overall success. Fuelled by pizza, they enthusiastically participated in the co-creation sessions, challenging the status quo and bringing new ideas to the table throughout. Not only did they consider the user journey but contributed to the design process - helping to refine the avatars that support users through the process, even insisting on the inclusion of a turtle!

Key facts

LAUNCH DATE: 6th April 2017 on the App Store and Google Play.
September 2017 on the NHS App Library.

DESIGN BUDGET: ~~REDACTED CONFIDENTIAL DATA~~
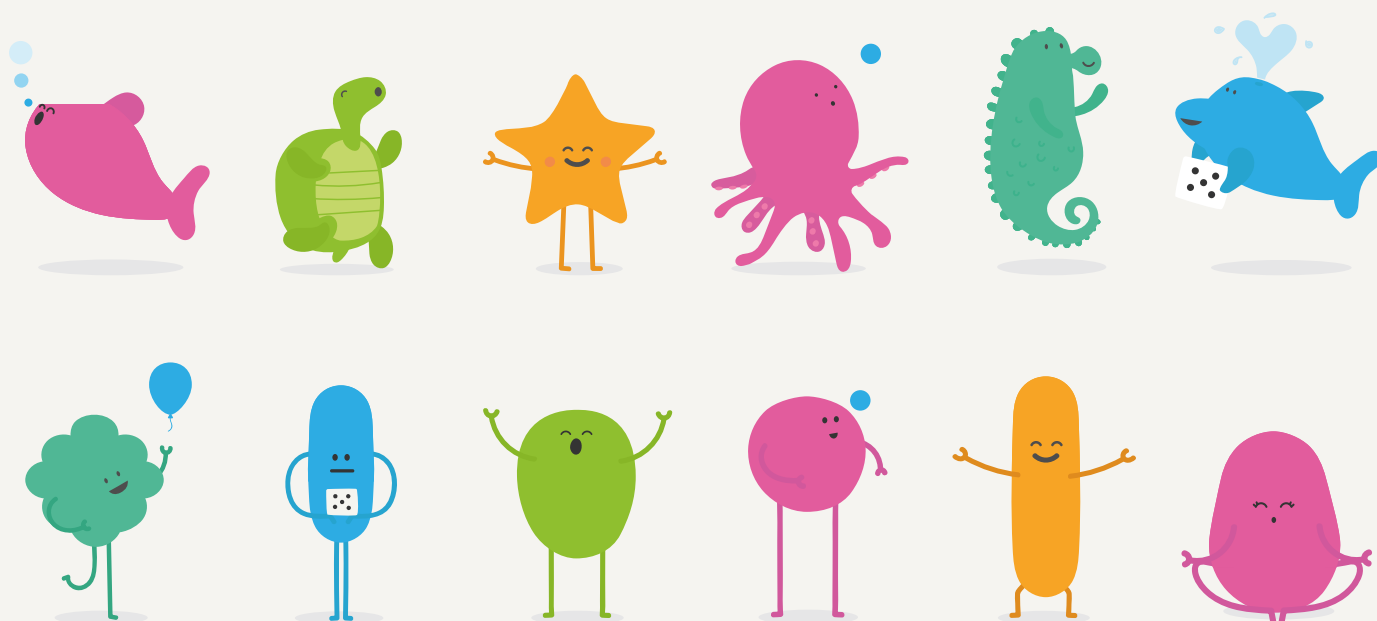
Results

All the original objectives were met and in fact, the performance and success of the app has gone way beyond anyone's expectations.

Given the subject matter, it's somewhat difficult to revel in the success of this project because for every download, that's one more child or young person that is vulnerable and in need of support. However, we are delighted that this app is there to support these individuals and that it has been so well received.

Dr Nihara Krause, CEO of stem4 commented:

"The process of designing the app was fantastic. HMA took the brief and really ran with it, understanding the user needs and translating them into a design and user experience that really resonates with those we're trying to help."

Objective 1:

Develop a widely accessible digital tool which supports over 100,000 individuals in the UK to resist or manage the urge to self-harm (with a specific emphasis on teenage mental health).

To date, there has been 804,717 downloads globally across both iOS and Android platforms.

As a more accurate figure of who the app has 'supported', we use the number of returning users i.e. those that have used the app more than once to manage their urges. At 63.7% there are 512,605 returning users.

93%** of users have reported a reduction in the urge to self-harm after completing an exercise and so we can estimate, based on these figures that the newly designed app has supported at least 476,723 people to resist or manage the urge to self-harm.

25% of the user base is located in the UK which demonstrates we have supported at least 119,181 individuals with their urge to self-harm in this country. Of these, based on the trends around anonymised data capture, we estimate that the highest proportion of these are teenagers (72,700).

*** This 93% efficacy rating is much higher than anticipated especially when reviewing internationally renowned health apps such as Sleepio who claim a 75% efficacy.*

To date, there has been

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25%

of users are located in the UK which demonstrates we have supported at least **119,181 individuals** with their urge to self-harm in this country.

29%

of users have chosen to provide **anonymous demographic** information.

Objective 2:

Devise an anonymised analytical model to evidence effectiveness and inform future iterative development.

It's worth noting that no mainstream analytics platform will include age data for users under 18 so it was important when looking at the analytics model that we had a good balance of 'usage' data along with anonymised demographic information that would help us understand whether the structure, content and outputs of the app are effective and that we were appealing to the right target audience.

Through 'optional' questions upon installation of the app including year of birth, gender, location (country and then county if in the UK) and whether the user is currently receiving professional care/advice for self-harm, we were able to build an analytical model which contributed to the data for objective 1.

- 29% of users have chosen to provide anonymous demographic information.
- 61% are aged <19yrs, demonstrating we are reaching the intended audience.
- 82% female and 12% male (6% unspecified/self-identified) – supporting the national statistics around girls being more likely to self-harm than boys.
- Only 25% are currently seeking care demonstrating that this app is being used more for self-management than in support of formal treatment.

61%

are **aged <19yrs**, demonstrating we are reaching the intended audience.

Objective 3:

Comply with NHS design standards and information governance requirements to facilitate publication on the NHS Apps Library.

Following a robust design and technical assessment, Calm Harm was published on the NHS Apps Library in September 2017 and is currently one of only 18 mental health apps that has made it through the rigorous process. There is no published data around how many submissions have been made to the NHS Apps Library but NHS Digital has referenced working with over 350 developers to include new apps; with 70 apps (across all health and care needs) being approved at the point of the NHS's 70th Birthday in July 2018.

The process involved a 191-question submission that delved into:

- Essential information about the app
- Privacy and Security
- Clinical Safety
- Interoperability
- Open Data
- Accessibility
- Usability
- Technical Stability
- Indicators of Effectiveness

Throughout the clinical safety assessment, design and usability was praised by the clinical safety officer who said

"The user-centred design approach taken for this project added great value to the final solution. There was a good balance of excellent design and well-thought-out user journeys alongside a solid understanding of the potential risks and hazards that an app of this nature might encounter. The clinical safety assessment was a joy to do."

(Alicia Ridout, mHabitat).

Calm Harm is currently one of only

18

that have made it through the rigorous process to be on the **NHS Apps Library**.

Appearing in top

50

Health & Wellbeing apps on **iOS** and **Google Play** in both UK & US.

People in over

170

countries are able to use the app.

Objective 4:

Raise the profile of stem4 and its work to support teenage mental health to encourage new opportunities and increased fundraising.

The app has attracted national and international publicity since launch including:

- Appearing in top 50 Health & Wellbeing apps on iOS and Google Play in both UK & US.
- Featuring in a pop-up exhibition at the London Design Museum in May 2017.
- Featuring in many national news articles including a recently published article on self-harm in The Guardian https://www.theguardian.com/society/2018/nov/21/uk-teenagers-turn-to-mobile-apps-to-help-with-mental-ill-health.
- Being labelled one of the 'must-have apps' for New Yorkers by New York News Channel Pix 11.

The app is already multi-award-winning with accolades including:

- Shortlisted for AXA PPP Health Tech & You Challenge Award
- Winner of Positive Practice Award for 'The Best Digital Innovation' by NHS Collaborative
- Winner of 'Best App' at Northern Digital Awards, January 2018
- Winner of the Gold 'Best Not for Profit Digital Experience' at UK Digital Experience Awards, July 2018
- Winner of the 'Best Not for Profit' and overall winner of 'Best User Experience' at the UXUK Awards, November 2018

Whilst the original intention was for the app to have a UK focus, its international profile has significantly contributed to an improved performance for stem4 and whilst the app is currently only in the English language, the focus on user-centred design means that people are able to use it in over 170 countries.

stem4 has become renowned for its digital portfolio and we have now gone on to work with them to create a new app called 'Clear Fear' to help teenagers manage anxiety (due for launch December 2018). The success of Calm Harm was integral to springboarding this new project as it provided confidence to the project funders including:

- Comic Relief Tech for Good fund @ ~~REDACTED CONFIDENTIAL DATA~~
- Personal donors who have provided funds to be ringfenced for app development @ ~~REDACTED CONFIDENTIAL DATA~~

CLEAR FEAR

User reviews

Over and above all the quantitative evidence of the app's success, by far the most valuable feedback has come from the users themselves. Some of our 5* app reviews say it best:

"It's perfect: the design is incredible and very nice to see, and it's really easy to use. The activities are playful, varied, and interesting. It always helps when I feel the urge to self-harm. To be honest, I don't feel like was doing it to stop the urge!"

"I was an avid self-harmer in the past but recently my urges and thoughts have been coming back. I've only downloaded this app this morning and I "rode the wave" for about a minute or so. I have to say that this is an amazing app that you've created for people like myself. It's good that someone has finally made something to help cope and distract from the thoughts and actions of self-harming. I think this app has the power to save people's lives, if that's not being too much to say. But I think it really can, self-harming is like an addiction to some people and the options and layout you give people is incredible. Hats off to you for making the most important app to help young people with mental illness. Thank you for creating an extraordinary app."

"I'm writing this email just to thank you, and to recognise in my small way, all of the work that you do and the positive impact that it has had on others. Your app is wonderfully set up, thorough, and extremely helpful. I can tell how much detail must have been put in to every aspect of the app, from the activities themselves, to the words chosen, to the colours and shapes used."

"DOWLOAD IT. Just do it. This app is honestly one of the only apps that actually distracts me in a way that doesn't feel fake, it is such a brilliant mix of ideas you automatically snap out of the mindset and into the app."

"This app is so helpful. The activities you can do are really simple, yet they help so much. I love everything about this app - the layout and design is so calming, and I even love the little characters they have. I highly recommend this to anyone struggling with self-harm."

"I would like to say a humongous thank you to the creators of Calm Harm. I've used it many times to avoid hurting myself. It has helped massively, and I find the coping strategies extremely helpful and they work very well. I also love how easily accessible everything is! It's very organised and quick and easy. Again, a huge thank you to everyone who created this app, you've saved my life, literally!! And I'm guessing so many more. You are the reason I'm still here guys and I will never ever be able to thank you enough!"

"I really really like this. The bright colours and entire vibrant atmosphere the app creates is a huge distraction, as many times someone in a bad state of mind sees everything on a grey scale. It's not too difficult to use, which is great for the younger generation. I love the art style. I've had many problems with self-harm and some are very serious, I think with this I could really have something to get over my pain in the moment. Amazing!"

Influencing factors

stem4 has always relied heavily on organic social media to publicise its activities and the level of proactive marketing on this platform remained consistent pre and post launch. With the increase in user base over time, reactive social media activity has risen exponentially in response to enquiries and posts about the app with an average of 19.4k impressions a month on stem4's Twitter account pre-launch and an average of 27.1k impressions post-launch (37.9% uplift post launch).

Featuring on the NHS Apps Library did raise the profile of the app leading to just over 75,000 downloads by the beginning of December 2017. However, the design-driven process was integral to the app's publication on this Library, so the publicity of inclusion was only a contributing factor to the success.

Following this, a simple tweet about the seasonal depression and holiday stress went viral in December 2017 and interest in the app rocketed from 75,000 downloads (primarily in the UK) to over 600,000 downloads globally in the space of four months (with 55,985 downloads on Christmas Day 2017 and 86,832 on Boxing Day 2017 contributing to this).

Usage per day

May 22, 2017	Jul 12, 2017	
	Sep 1, 2017	Oct 22, 2017
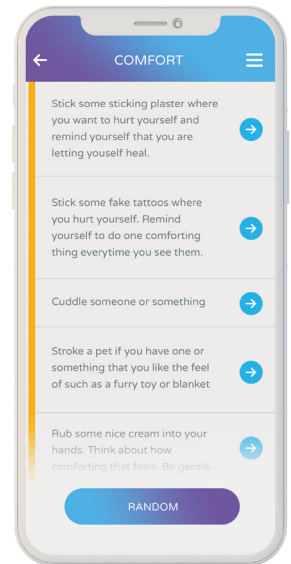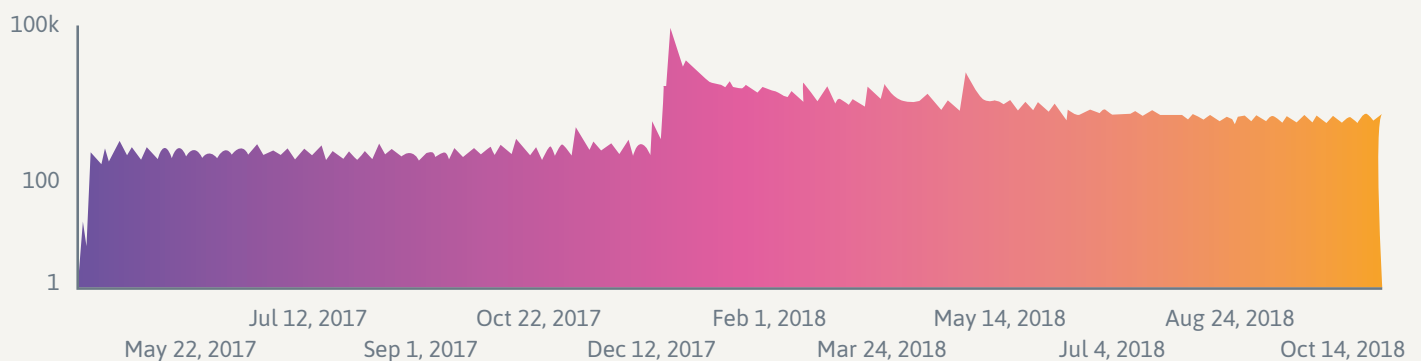
We've found that general interest in the app has risen organically as a result of social media recommendations with tweets about Calm Harm regularly getting hundreds of likes and shares. Users often include screenshots of the app in their tweets and some people have even created videos of their interactions with the design, with comments on the visual element of the app such as

> "I chose the interface with the cute sea animals and bright colours."

There has also been a significant increase in press coverage around mental health, specifically self-harm and Calm Harm is often featured which has undoubtedly led to an increase in interest.