

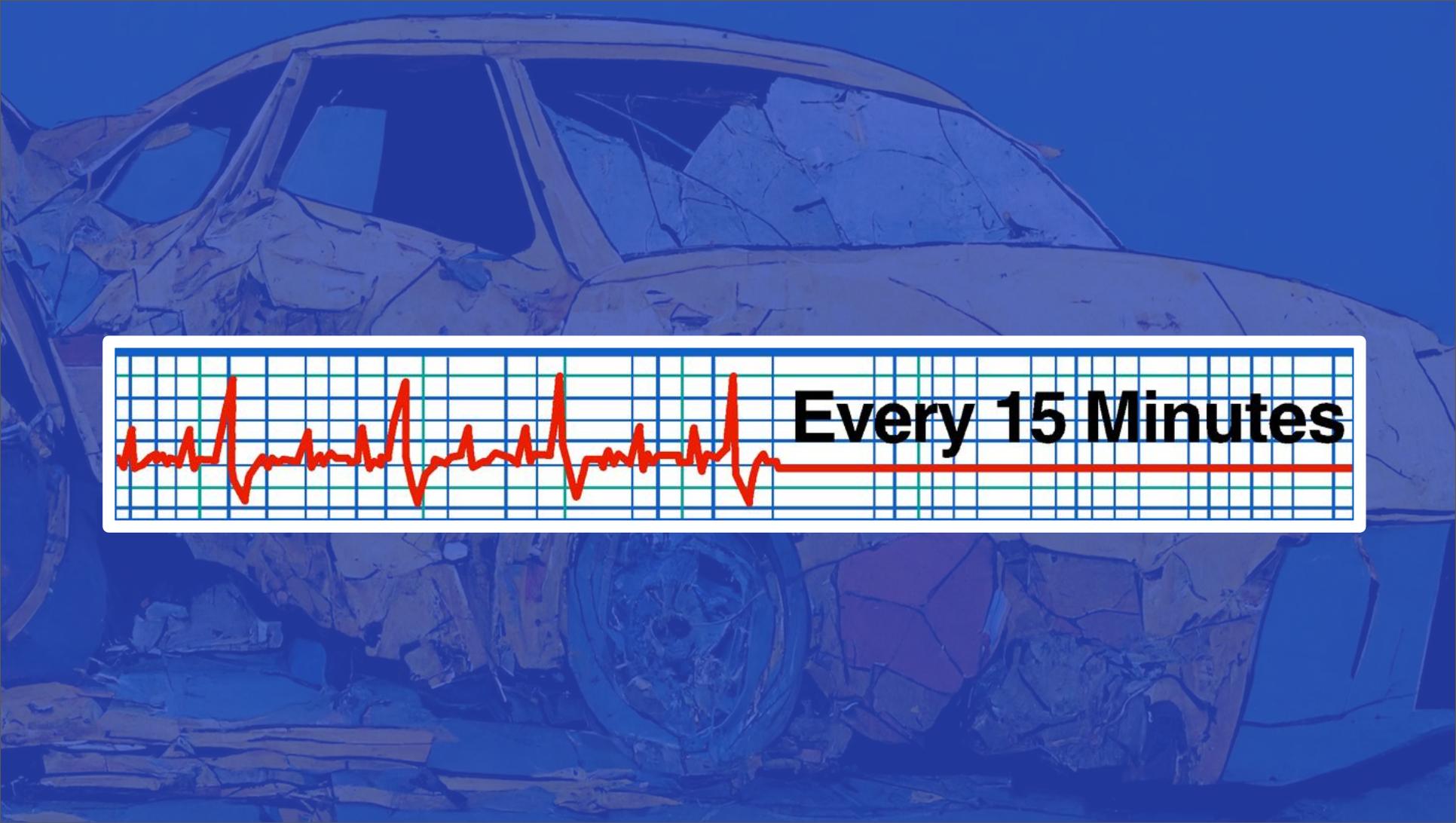
Harm Reduction

A Framework For Effective & Compassionate Security Guidance

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Blackhat 2022
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Story time



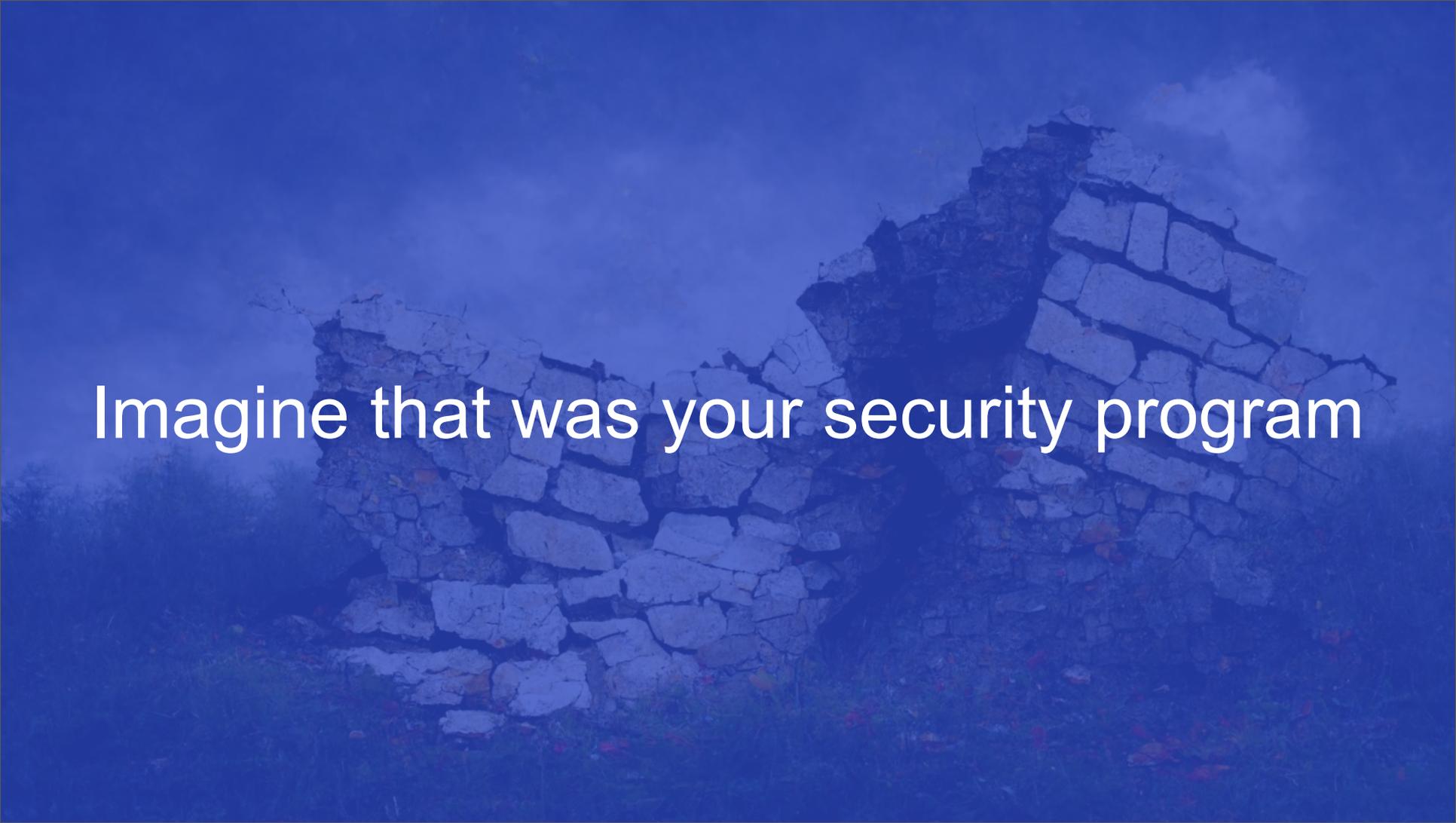
Every 15 Minutes

A blue-tinted illustration of a group of young people in a car. The scene is viewed from the side, showing the interior of the vehicle. Several people are visible, some looking towards the camera and others looking away. One person in the foreground is holding a glass of beer. The overall mood is casual and social.

DARE, Every 15, and similar programs likely increase alcohol intake.

A man and a woman are standing in a gallery, looking at a framed painting on the wall. The man is on the left, wearing a dark jacket, and is gesturing towards the painting with his hands. The woman is on the right, wearing a dark dress and glasses, looking at the painting. The painting itself depicts a scene with several figures in a room. The entire image has a blue tint.

Why am I telling you this?

A blue-tinted photograph of a crumbling stone wall, symbolizing a failed security program. The wall is made of large, irregular stones and is heavily damaged, with many sections missing and the structure appearing unstable. The background shows a cloudy sky and some vegetation. The overall mood is one of decay and failure.

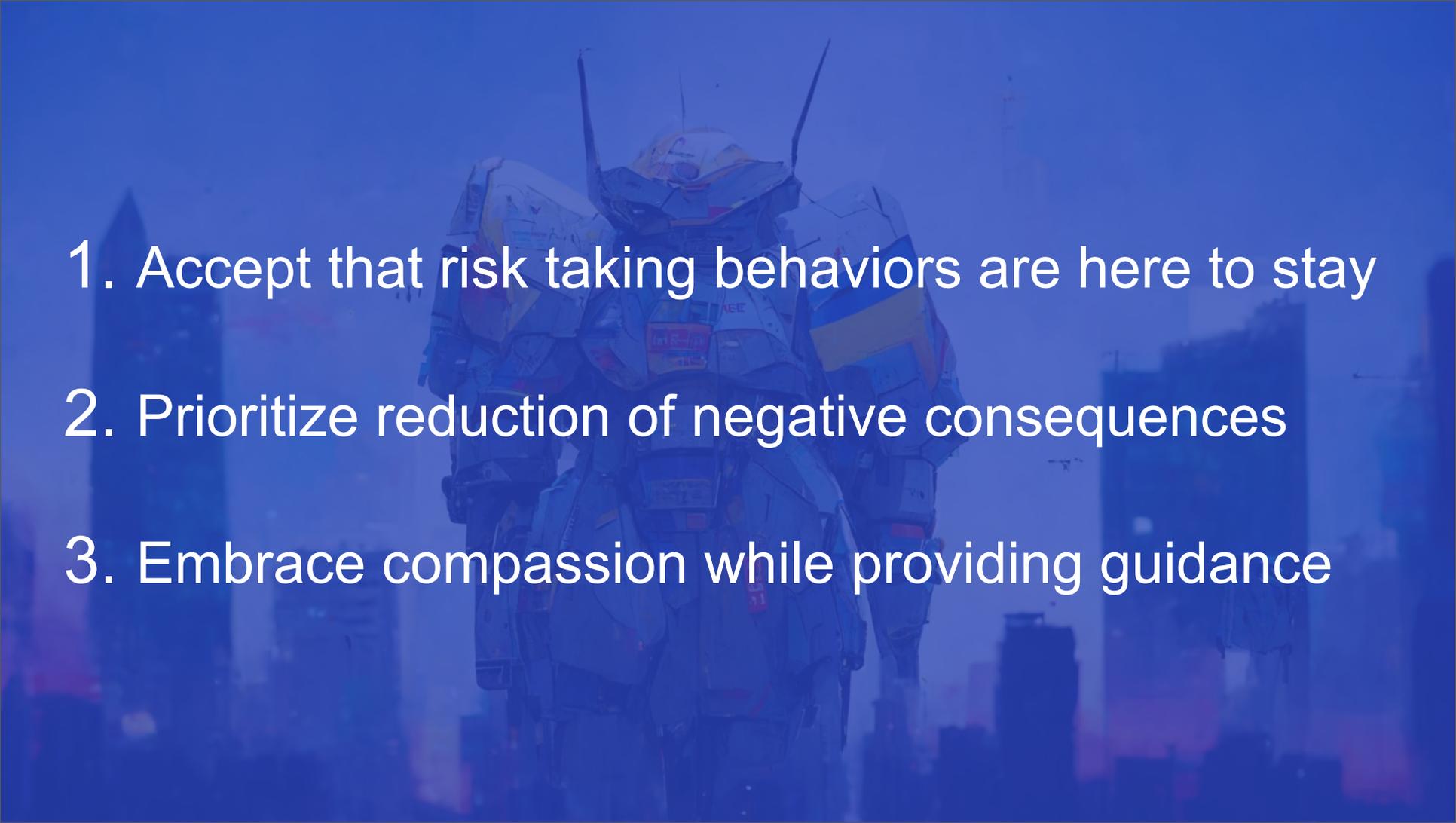
Imagine that was your security program

A blue-tinted image of a shepherd with a flock of sheep in a misty landscape. The shepherd is on the right, wearing a dark coat and a hat, looking towards the left. A large flock of sheep is in the foreground and middle ground. In the background, there are trees and a small building with a dome. The text "I want to help you give better security guidance" is overlaid in white.

I want to help you give
better security guidance



I'm Kyle, harm reduction enthusiast

- 
1. Accept that risk taking behaviors are here to stay
 2. Prioritize reduction of negative consequences
 3. Embrace compassion while providing guidance

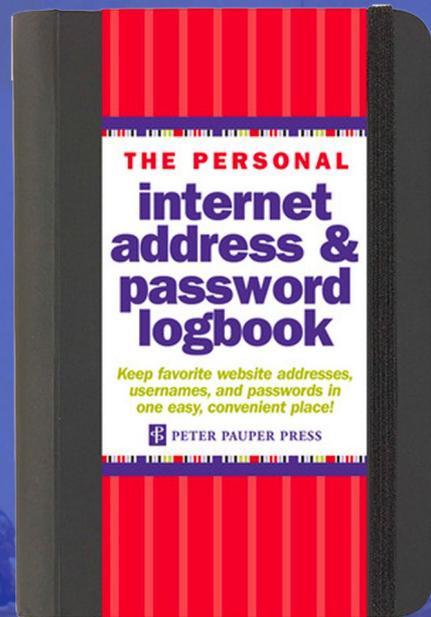
A blue-tinted landscape featuring a stone path that winds through a valley. In the background, several jagged mountain peaks rise against a cloudy sky. The overall scene is atmospheric and serene.

Let's talk security guidance

Example #1



Example #2



Example #3





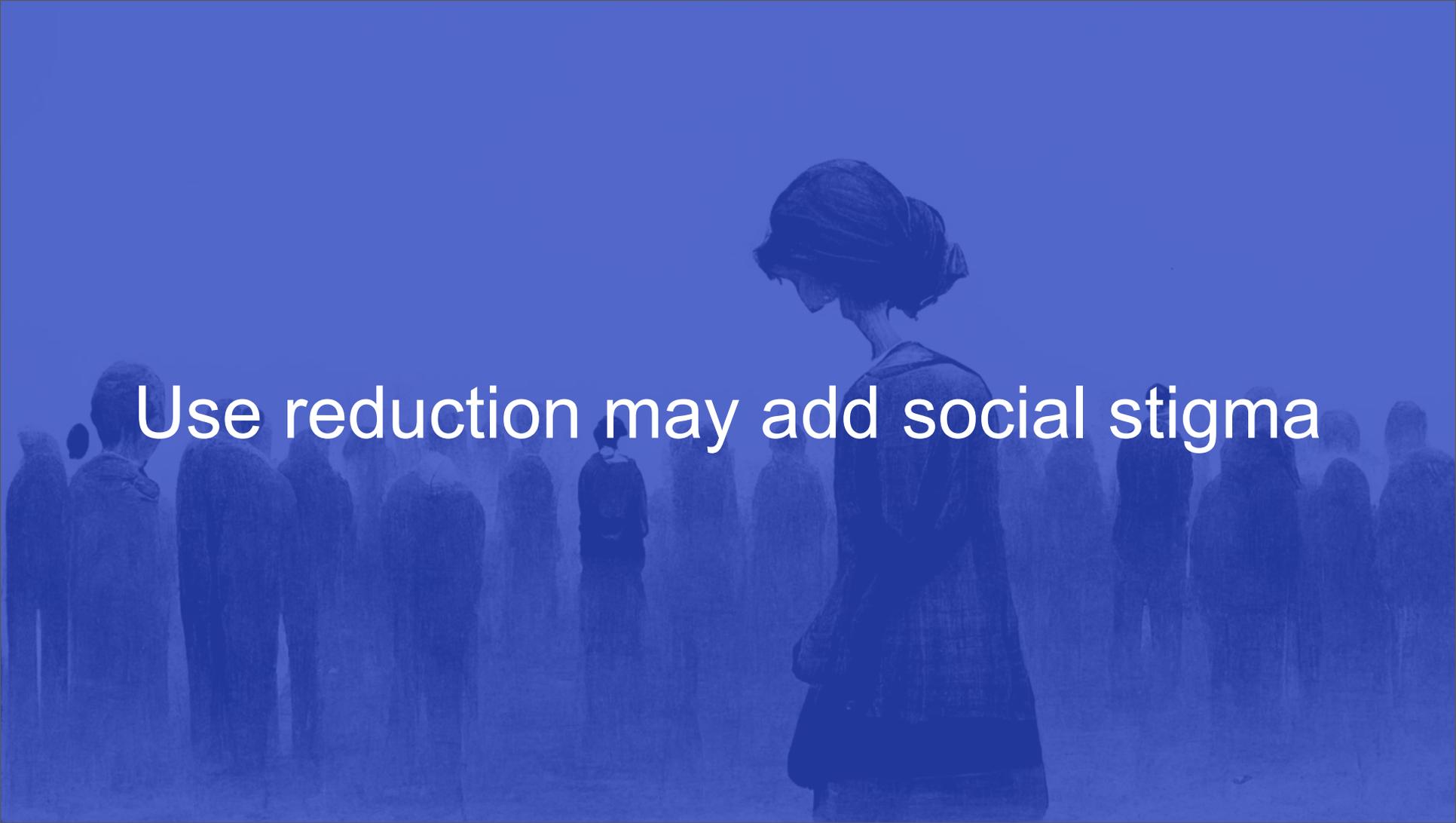
This is use reduction

A conceptual photograph with a blue color cast. It shows a person's legs from the knees down, wearing high-heeled shoes. The person is stepping on a light-colored, cracked, and parched surface, likely representing drought. Two red, thorny, and spiky plants are growing from the cracks. One plant is being pulled by the person's hand, and another is being stepped on by the heel of the shoe. The overall mood is one of environmental hardship and the impact of climate change.

What's the harm?

A blue-tinted photograph showing a large pile of discarded items, including a wooden crate and several bowls, all filled with what appears to be broken plastic and metal pieces. The text "Nothing done about original incentives" is overlaid in white on the center of the image.

Nothing done about original incentives

A blue-tinted illustration of a crowd of people. In the foreground, a woman wearing a headscarf and a dark coat is shown in profile, looking down. The background is filled with many other people, some standing and some walking, all rendered in a similar blue-tinted style. The overall mood is somber and reflective.

Use reduction may add social stigma

A night cityscape with a meteor shower. The sky is dark blue with numerous white and yellow streaks representing meteors. The city skyline is visible at the bottom, with several tall buildings. The text "Behaviors may have community impact" is overlaid in white.

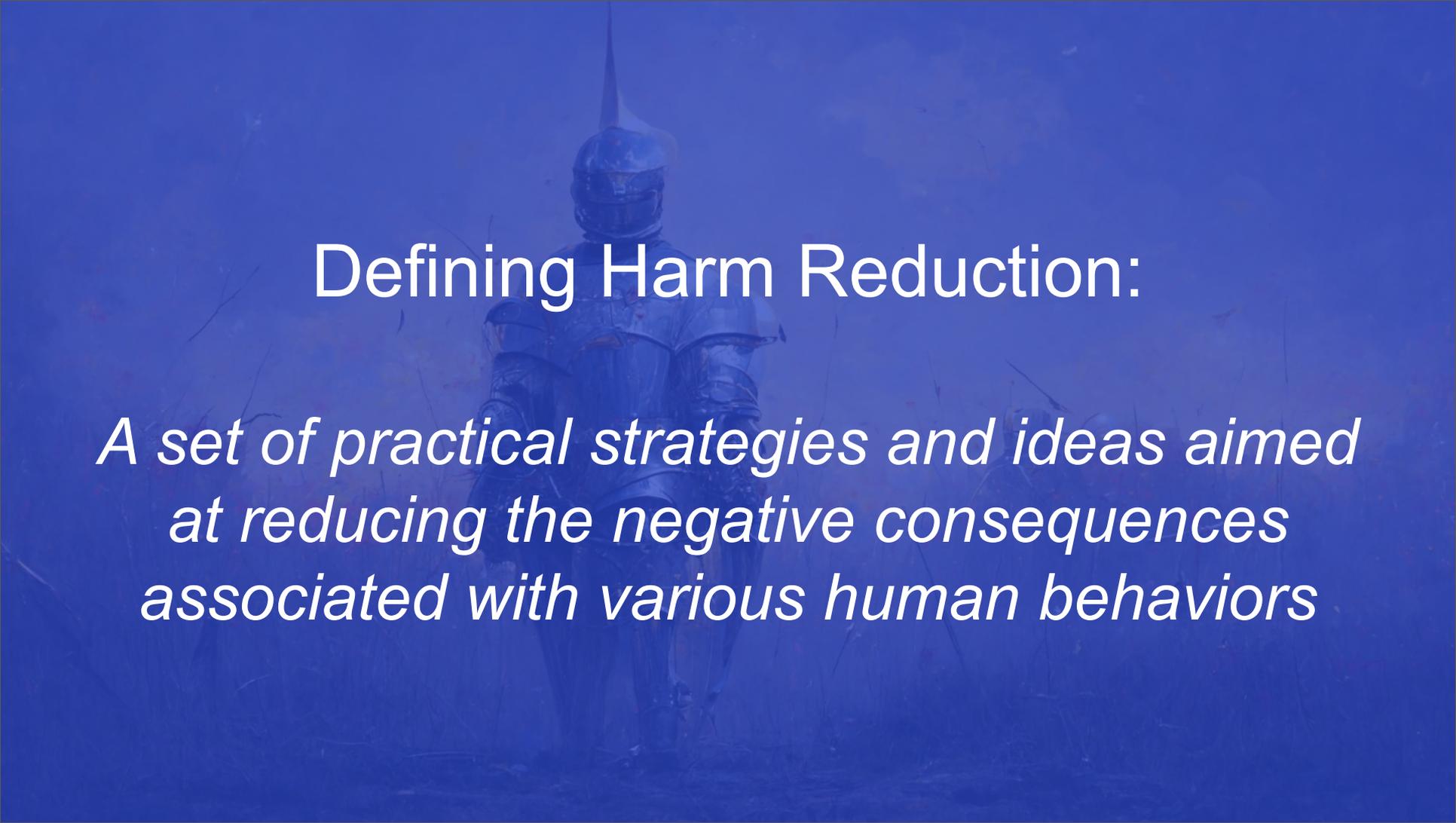
Behaviors may have community impact

A blue-tinted photograph of a doctor in a white lab coat holding a large knife, with another doctor in the background.

iatrogenesis

A person is skydiving over a field of red flowers. The sky is blue with some clouds. The person is in the center, with their parachute open. The field of flowers is in the foreground, and the sky is in the background. The overall scene is peaceful and scenic.

Harm Reduction Enters The Chat



Defining Harm Reduction:

A set of practical strategies and ideas aimed at reducing the negative consequences associated with various human behaviors

A clear plastic vial containing a syringe and other medical supplies, lying horizontally on a blue background. The vial is filled with various medical items, including syringes and needles, which are visible through the clear plastic. The background is a solid, deep blue color.

Origins of Harm Reduction

Note: use reduction still relevant





Applying Harm Reduction to Security



1. Accept that risk taking behaviors are here to stay

2. Prioritize reduction of negative consequences

3. Embrace compassion while providing guidance

A blue-tinted illustration of a classroom. In the foreground, a young girl with short hair is seen from behind, her right hand raised high. She is wearing a dark sweater over a white collared shirt. The classroom is filled with other children, many of whom also have their hands raised. They are seated at desks, and the room has a bright window in the background. The overall atmosphere is one of active participation and learning.

Why?

A painting of two elderly men in a dimly lit room. The man on the left is seated in a wooden armchair, wearing a dark coat and glasses, and is smoking a cigar. The man on the right is seated in a wooden chair, wearing a dark coat and glasses, and has a long white beard. The background is dark and textured. The entire image is overlaid with a blue tint.

Risk taking behaviors occur for a reason

A person is seen from behind, carrying a massive, bulky backpack made of crumpled paper. The backpack is so large it obscures most of their torso and extends far beyond their shoulders. The person has a beard and is wearing a blue shirt. The background is a solid, dark blue color. The overall image conveys a sense of burden and inefficiency.

Use Reduction Is Not Efficient

The image features a dark blue background with a subtle, artistic rendering of two butterflies. The butterflies are positioned symmetrically, one on the left and one on the right, with their wings spread. The wings are a lighter shade of blue with delicate, vein-like patterns. The overall aesthetic is soft and ethereal. Centered over the butterflies is the text "Use reduction programs can have unintended consequences." in a clean, white, sans-serif font. The text is arranged in two lines, with the first line being "Use reduction programs can have" and the second line being "unintended consequences.".

Use reduction programs can have
unintended consequences.

A blue-tinted historical photograph of a crowded saloon. In the center, a large bottle of liquor stands on a counter. Several men in suits and hats are visible, some standing near the bar and others in the background. The scene is dimly lit, with posters and notices on the walls. The overall atmosphere is one of a busy, illicit establishment.

Iron Law of Prohibition

A photograph of various glass bottles and containers on a white surface, overlaid with a blue gradient and the text "Abstinence violation effect". The scene includes several bottles of different shapes and sizes, some with caps, and various small containers and objects scattered around. The overall image has a blue tint.

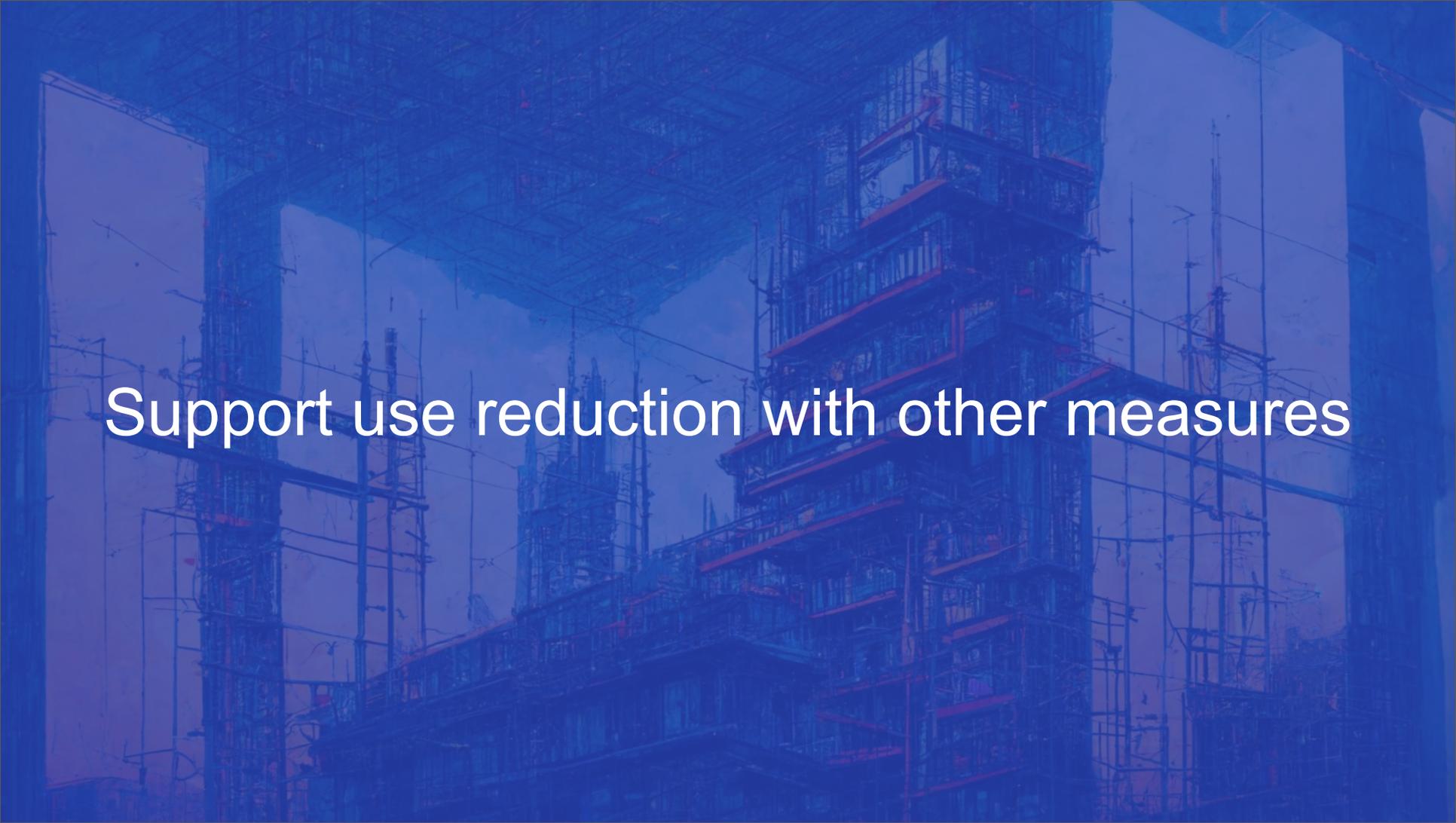
Abstinence violation effect

What does the research show?

- **Alcohol Prohibition**
 - Initial drop of 70% receded to 30% reduction over time.
 - Annual enforcement costs rose from \$6M to \$13M
- **Teenage Pregnancy Prevention**
 - Title V of the Social Security Act effectively guarantees >\$100 Million for abstinence based pregnancy prevention
 - 6 years of congressional research found no program had any significant impact on stopping or delaying sex.
- **War on drugs**
 - Since 1971 the United States spent > \$1 trillion dollars
 - Has not eradicated drug trade, potentially increased it.
- **D.A.R.E.**
 - Drug Abuse and Resistance Education program
 - Research shows it was entirely ineffective and in many cases increasing future harmful behaviors.



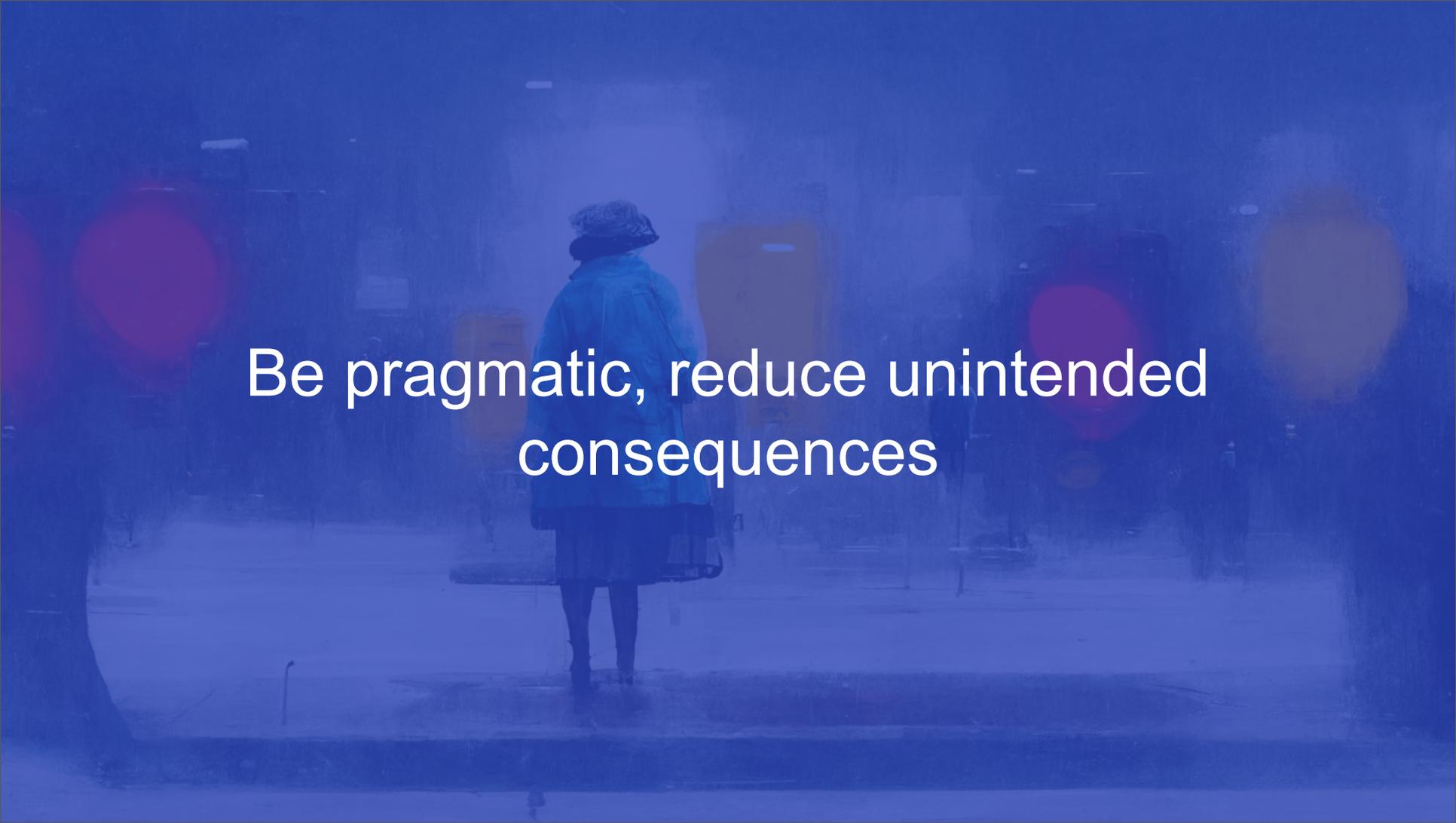
Accept that eradication is not the goal



Support use reduction with other measures

A young child with dark hair is sitting in a swimming pool, viewed from behind. The child is wearing a dark-colored shirt. In front of the child is a large, dark-colored inflatable ring with a red inner lining. The pool water is blue, and the background shows a blurred view of the pool deck and other people. The entire image has a blue color overlay.

Make risky behaviors less risky

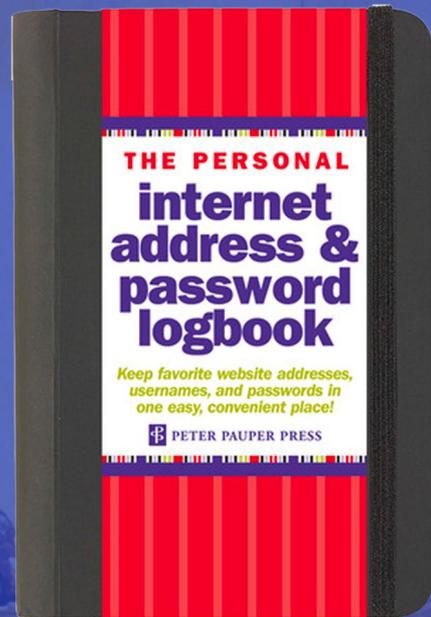
A person wearing a heavy winter coat and hat stands with their back to the camera in a snowy, foggy outdoor setting. The scene is overlaid with a semi-transparent blue filter. The person is positioned in the center of the frame, looking towards a building entrance in the distance. The overall mood is cold and somber.

Be pragmatic, reduce unintended
consequences

Example #1

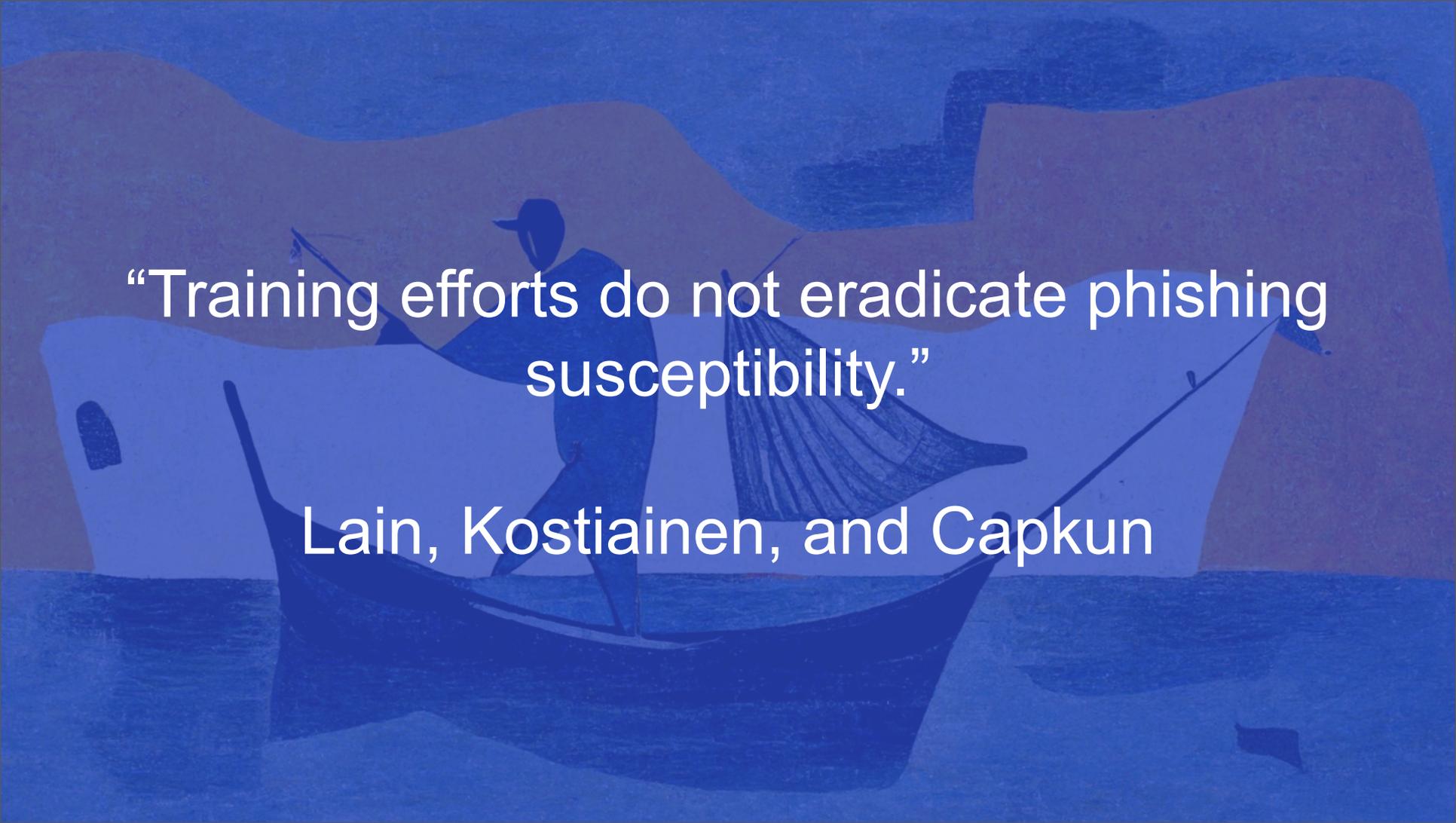


Example #2



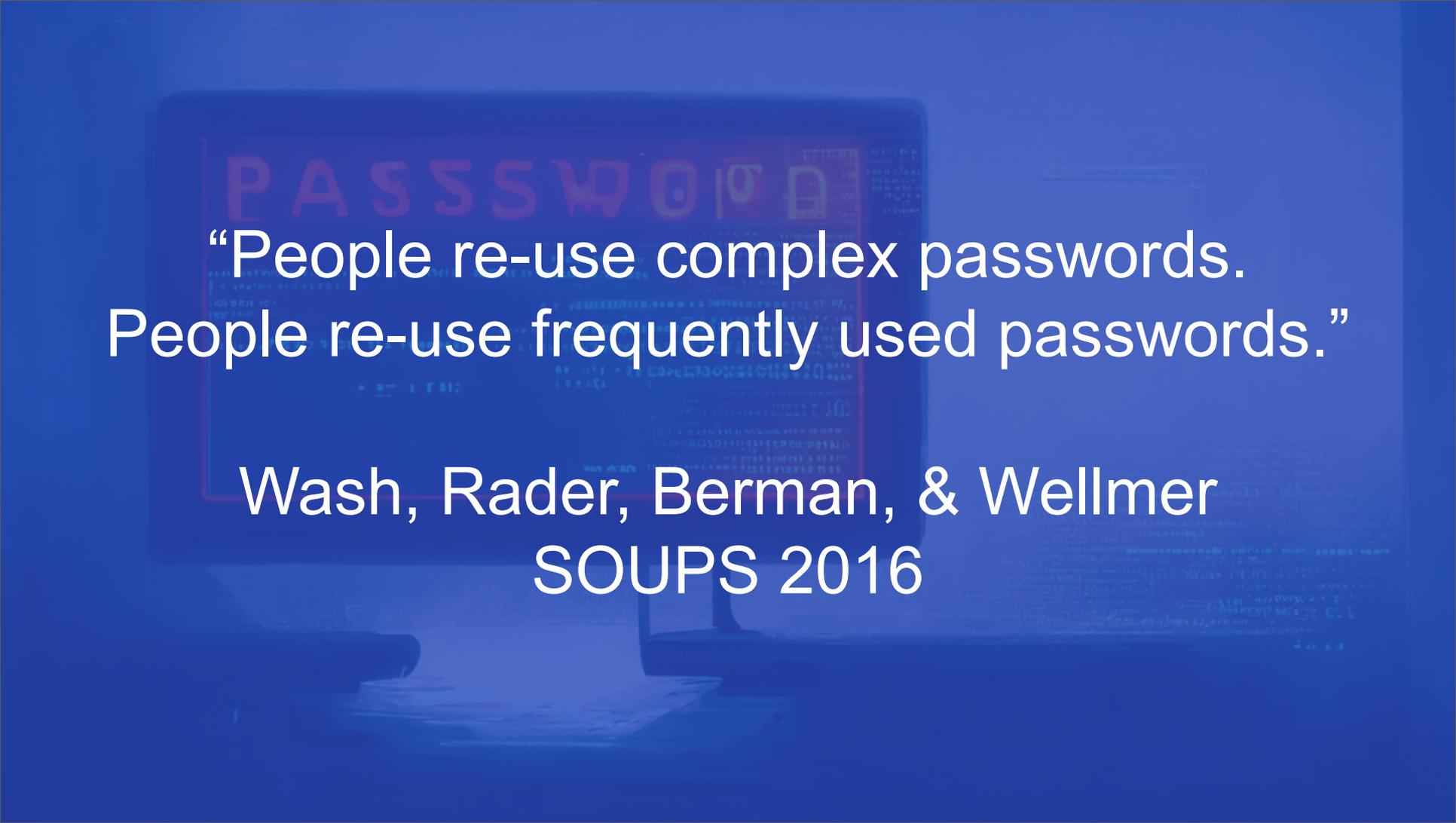
Example #3





“Training efforts do not eradicate phishing susceptibility.”

Lain, Kostianen, and Capkun



“People re-use complex passwords.
People re-use frequently used passwords.”

Wash, Rader, Berman, & Wellmer
SOUPS 2016



1. Accept that risk taking behaviors are here to stay

2. Prioritize reduction of negative consequences

3. Embrace compassion while providing guidance

A blue-tinted photograph of a classroom. In the foreground, a young child with short, dark hair is seen from behind, wearing a red long-sleeved shirt and dark overalls. The child's right hand is raised high. In the background, many other children are seated at desks, and their hands are also raised, creating a sense of active participation. The overall atmosphere is one of a busy, engaged learning environment.

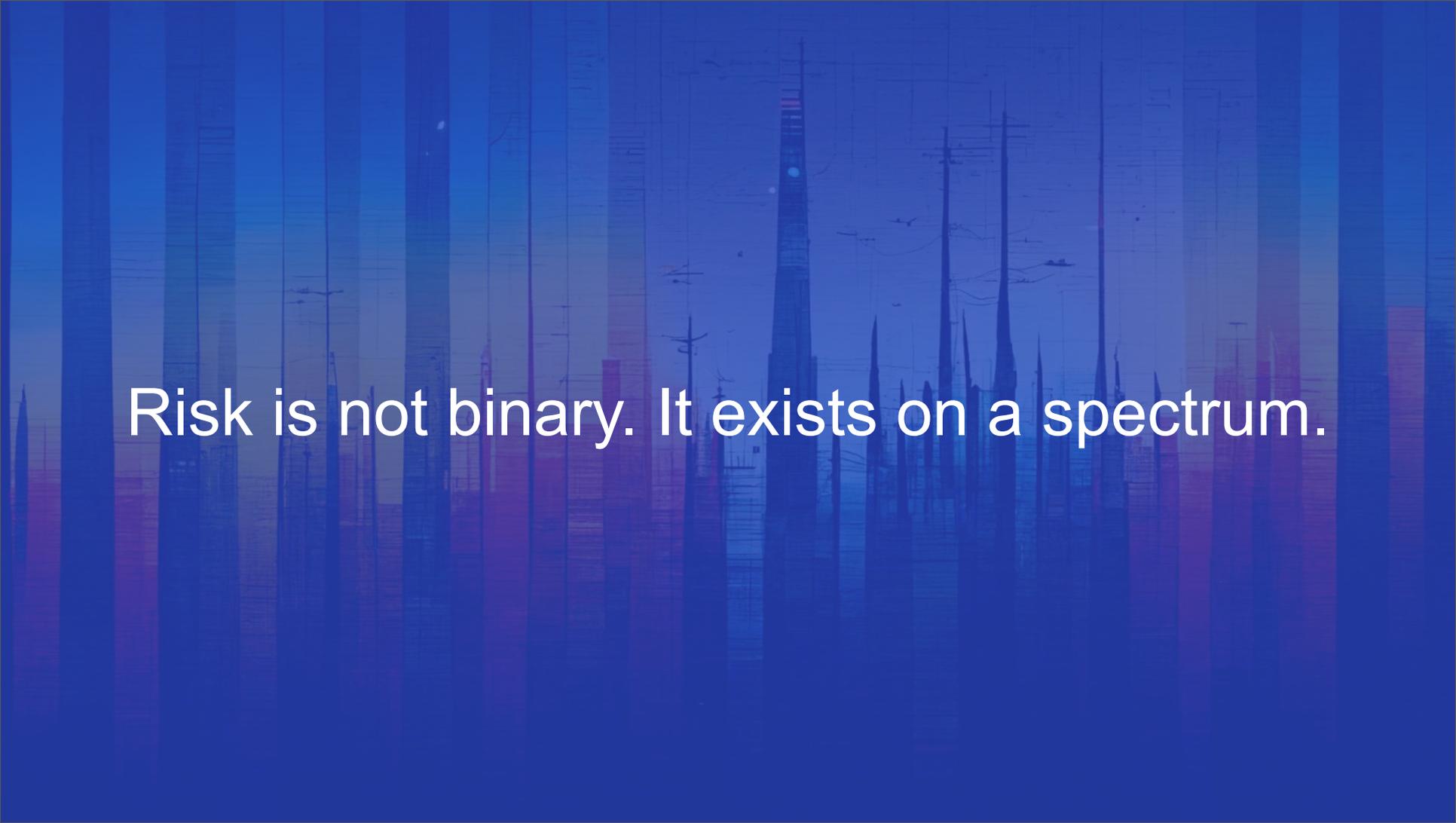
Why?



Eradication is not possible

A large crowd of people is shown from behind, filling the frame. The image is heavily overlaid with a blue color, and a faint horizon line is visible at the top. The text is centered in white.

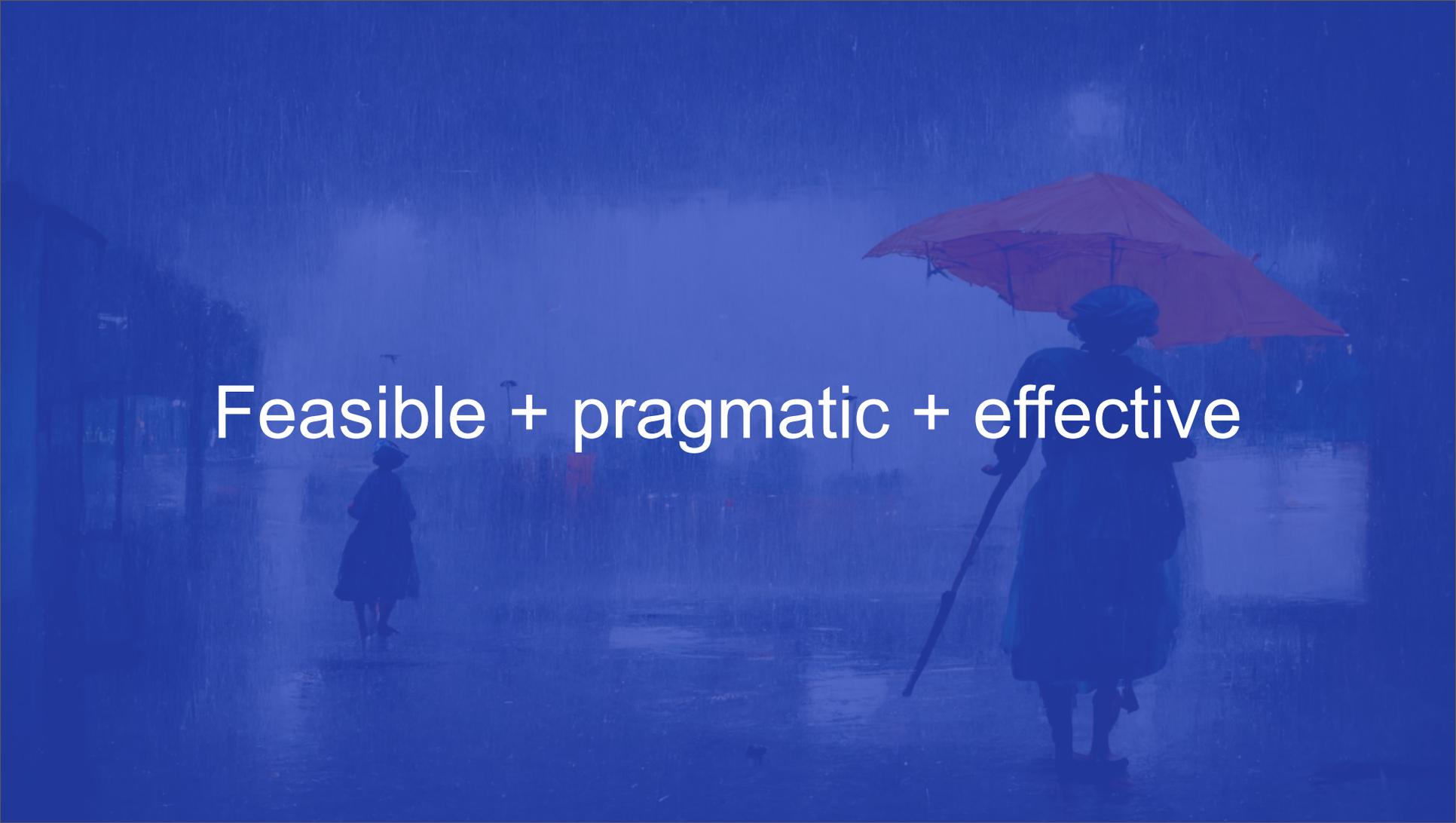
Individuals who cannot abstain take risks for themselves AND the population



Risk is not binary. It exists on a spectrum.



Any steps on risk spectrum towards lower
harm are valuable

A blue-tinted photograph of a rainy street scene. In the foreground, a person wearing a dark coat and a hat walks away from the camera, holding a large, bright red umbrella. The umbrella is the only source of color in the scene. In the background, another person in a dark coat and hat is walking away. The street is wet and reflects the light. The overall atmosphere is somber and quiet.

Feasible + pragmatic + effective

A blue-tinted photograph of two people in winter coats standing on a rooftop, looking out at a city skyline at night. The text "Harm reduction & use reduction work together" is overlaid in white.

Harm reduction & use reduction
work together

What does the research show?

- **E-cigarettes in UK v USA**
 - USA banned. UK regulated.
 - In USA: High concentration, marketing to minors, black market products, > 50 deaths
 - In UK: Lower concentration, Youth usage 4x lower, used in smoking cessation, 0 deaths
- **Virginity pledges**
 - Teens who pledge equally likely to have sex
 - Teens who pledge less likely to use contraception, less likely to test for STDs, have STDs for longer
- **War on Drugs (the birthplace of harm reduction)**
 - Syringe sharing reduces new HIV infections by 70%
 - Safe injection sites decrease overdoses by 35%
 - Access to Naloxone reduces overdoses by 11%

A blue-tinted photograph of soldiers in a tent. Several soldiers are gathered around a table, looking at a large map or document. The scene is dimly lit, and the overall atmosphere is serious and focused. The text "Use reduction must be supported with additional strategies" is overlaid in white on the image.

Use reduction must be supported with
additional strategies

A still life composition featuring a large glass bottle with a cork stopper on the right, a smaller glass bottle on the left, and a mortar and pestle in the foreground. The scene is set on a wooden surface. The entire image is overlaid with a blue gradient and a faint, stylized floral pattern. The text "Design treatments that reduce that harm" is centered in white.

Design treatments that reduce that harm

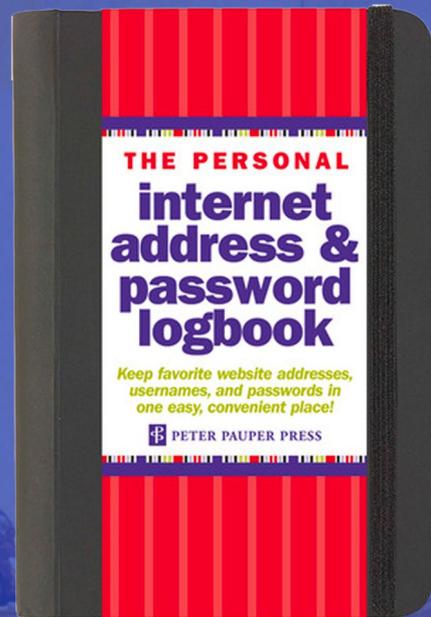


Similar to defense in depth

Example #1



Example #2



Example #3





ELSEVIER

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ADOLESCENT
HEALTH

www.jahonline.org

Commentary

It is Time to Teach Safe Sexting

Justin W. Patchin, Ph.D.^{a,*}, and Sameer Hinduja, Ph.D.^b

^aDepartment of Political Science, University of Wisconsin-Eau Claire, Eau Claire, Wisconsin

^bSchool of Criminology and Criminal Justice, Florida Atlantic University, Jupiter, Florida

Article history: Received October 21, 2019; Accepted October 21, 2019



“Never include your face”

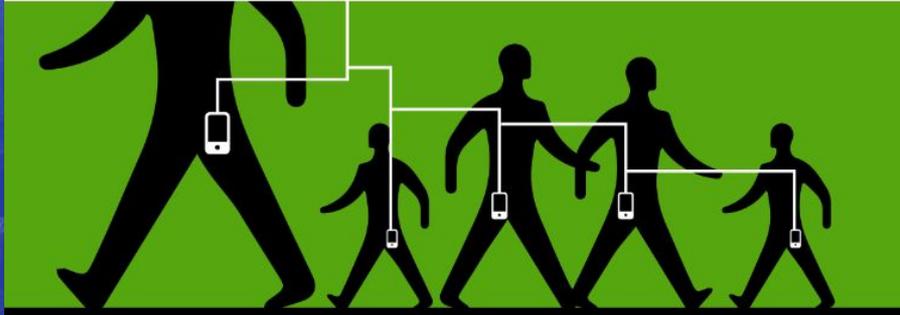
“Make sure that your communications are in a secret chat with self-destructing messages set to a short timeframe.”



About Issues Our Work Take Action Tools **Donate** Q

Telegram Harm Reduction for Users in Russia and Ukraine

BY EVA GALPERIN | MARCH 4, 2022



The illustration shows five black silhouettes of people walking from left to right against a green background. Each silhouette has a white mobile phone icon attached to it. White lines connect the phones, forming a network that suggests communication or data flow between the individuals.



2FA: TOTP > SMS > Nothing

A blue-tinted photograph showing a man on the left shouting with his mouth wide open and hand raised, and a woman on the right with a shocked expression, her mouth also wide open. The background is a plain, light color.

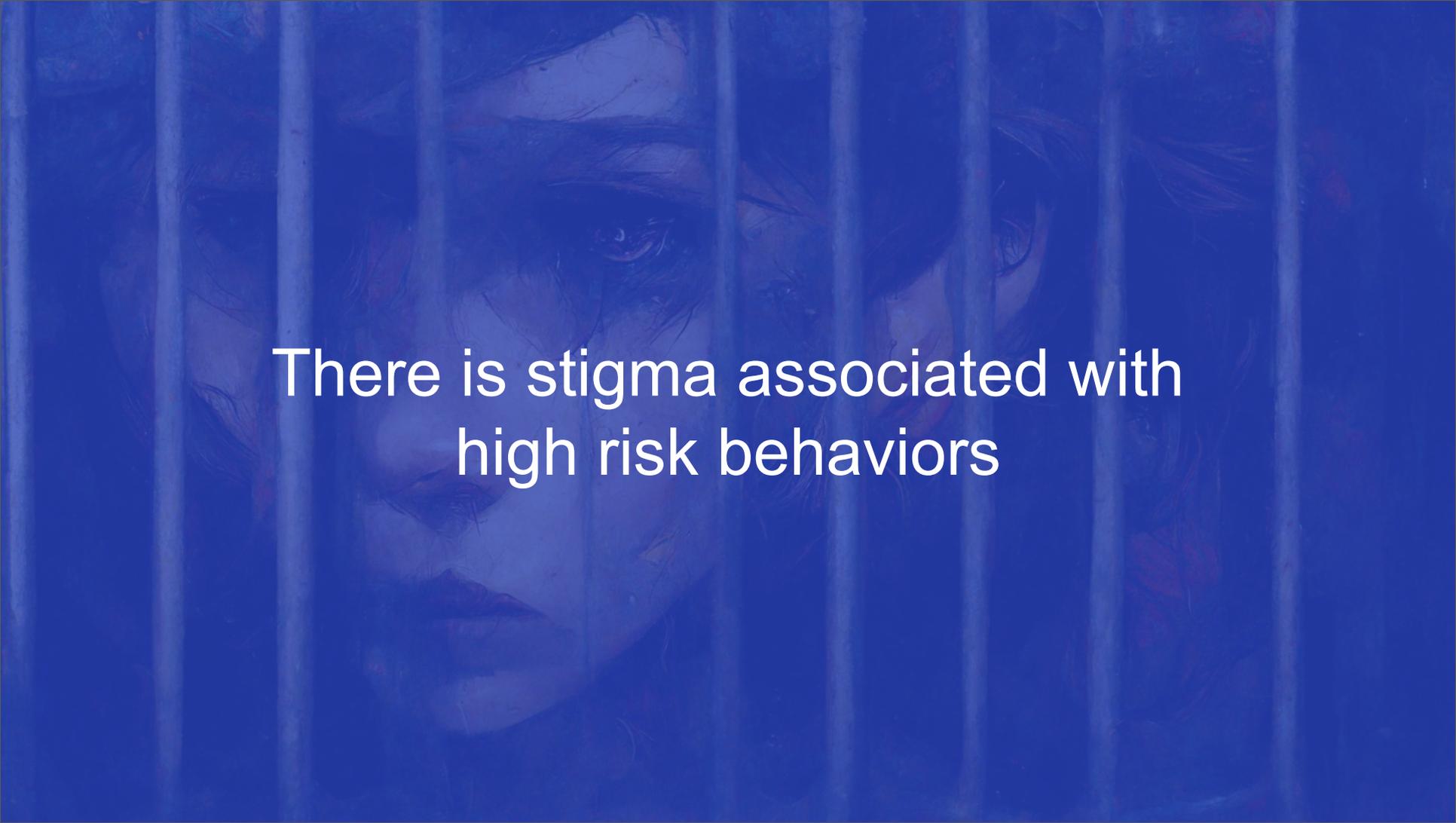
~~Don't do that~~

Try not to do that, but if you do then here are
some ways to be safe

- 
1. Accept that risk taking behaviors are here to stay
2. Prioritize reduction of negative consequences
- 3. Embrace compassion while providing guidance**

A blue-tinted photograph of a classroom. Numerous children are seated at desks, and many have their hands raised in the air. The children are dressed in school uniforms, including dark jackets and light-colored skirts or trousers. In the center of the image, the word "Why?" is written in a white, sans-serif font. The background shows a classroom setting with a window and a framed picture on the wall.

Why?

A close-up photograph of a woman's face, partially obscured by vertical metal bars. The image is heavily tinted with a dark blue color, creating a somber and confined atmosphere. The woman's eyes are looking directly at the camera with a serious expression. The bars are in the foreground, creating a sense of being trapped or imprisoned.

There is stigma associated with
high risk behaviors



Stigmatizing can break down defenses

A blue-tinted illustration of a vast field of colorful flowers. In the center, a person in a light blue dress stands facing a large, ornate, dragon-like creature with a crown of leaves and flowers. The creature has a long, curved neck and a head with horns. The background shows a cloudy sky and distant figures. The overall mood is serene and contemplative.

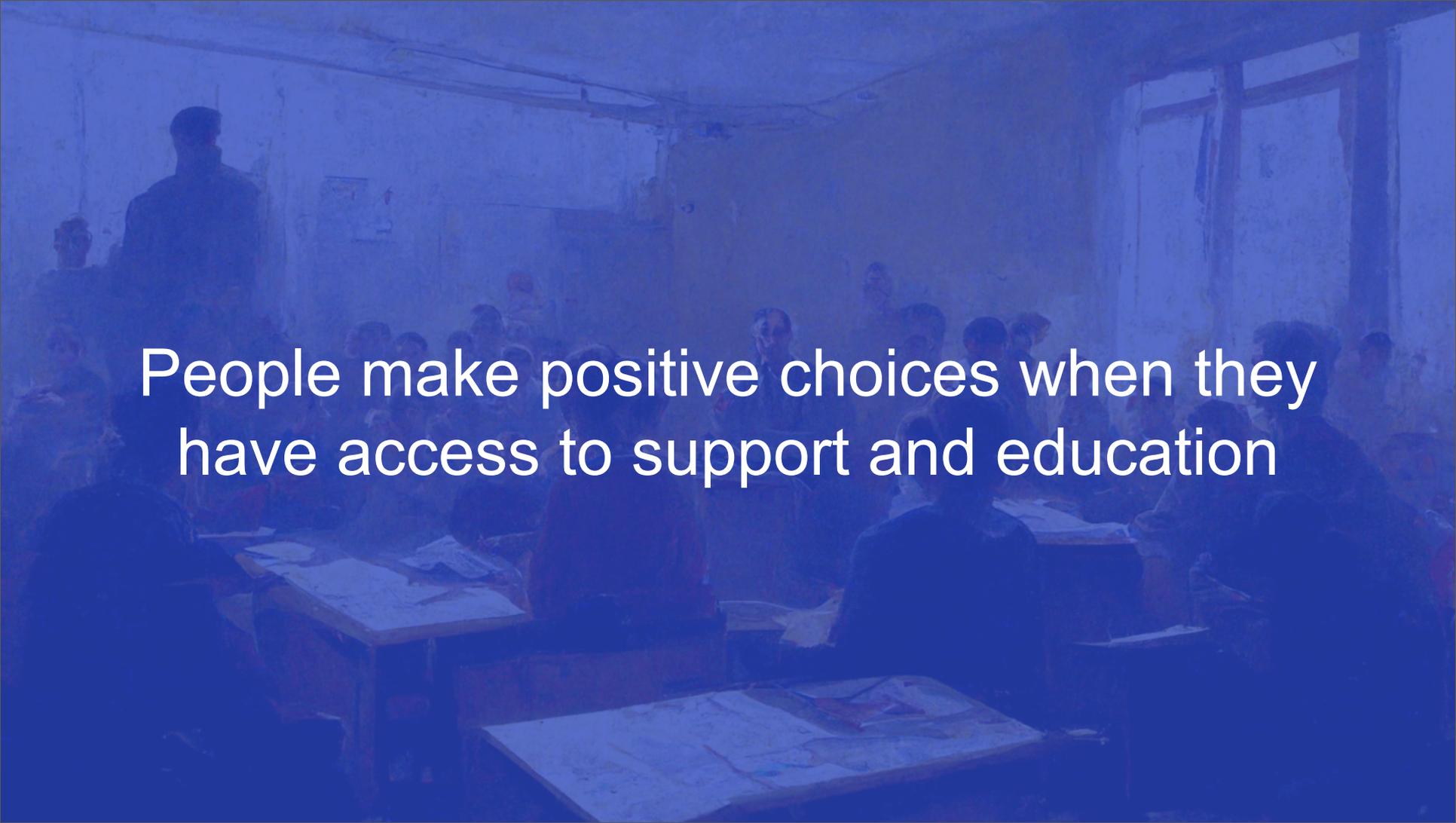
Empathy & compassion > confrontation



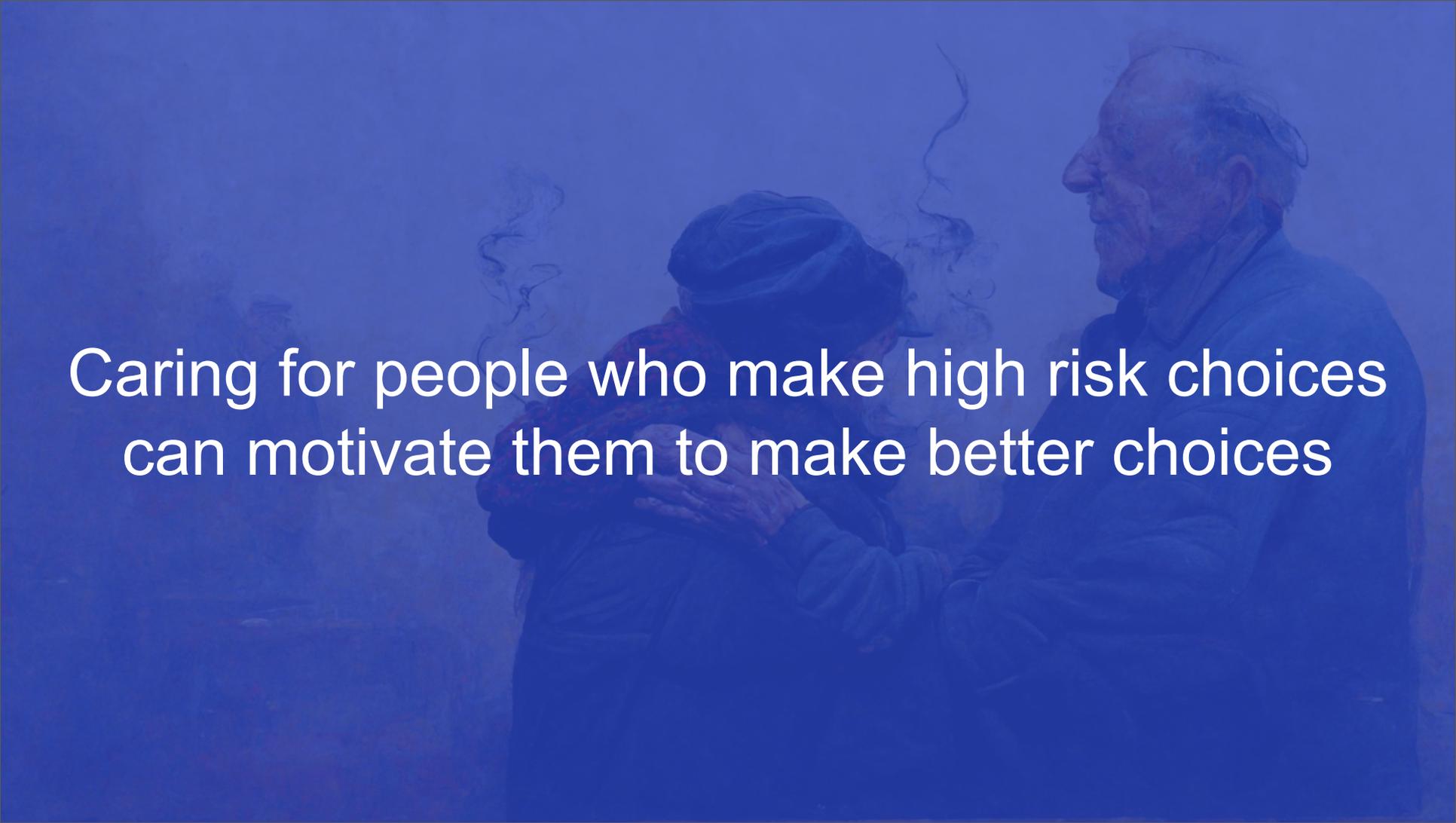
Compassion includes
improving quality of life

Encourage change through collaboration,
accessibility, and kindness



A dimly lit classroom with students at desks and a teacher at the front. The scene is overlaid with a blue tint. The text is centered in the middle of the image.

People make positive choices when they
have access to support and education



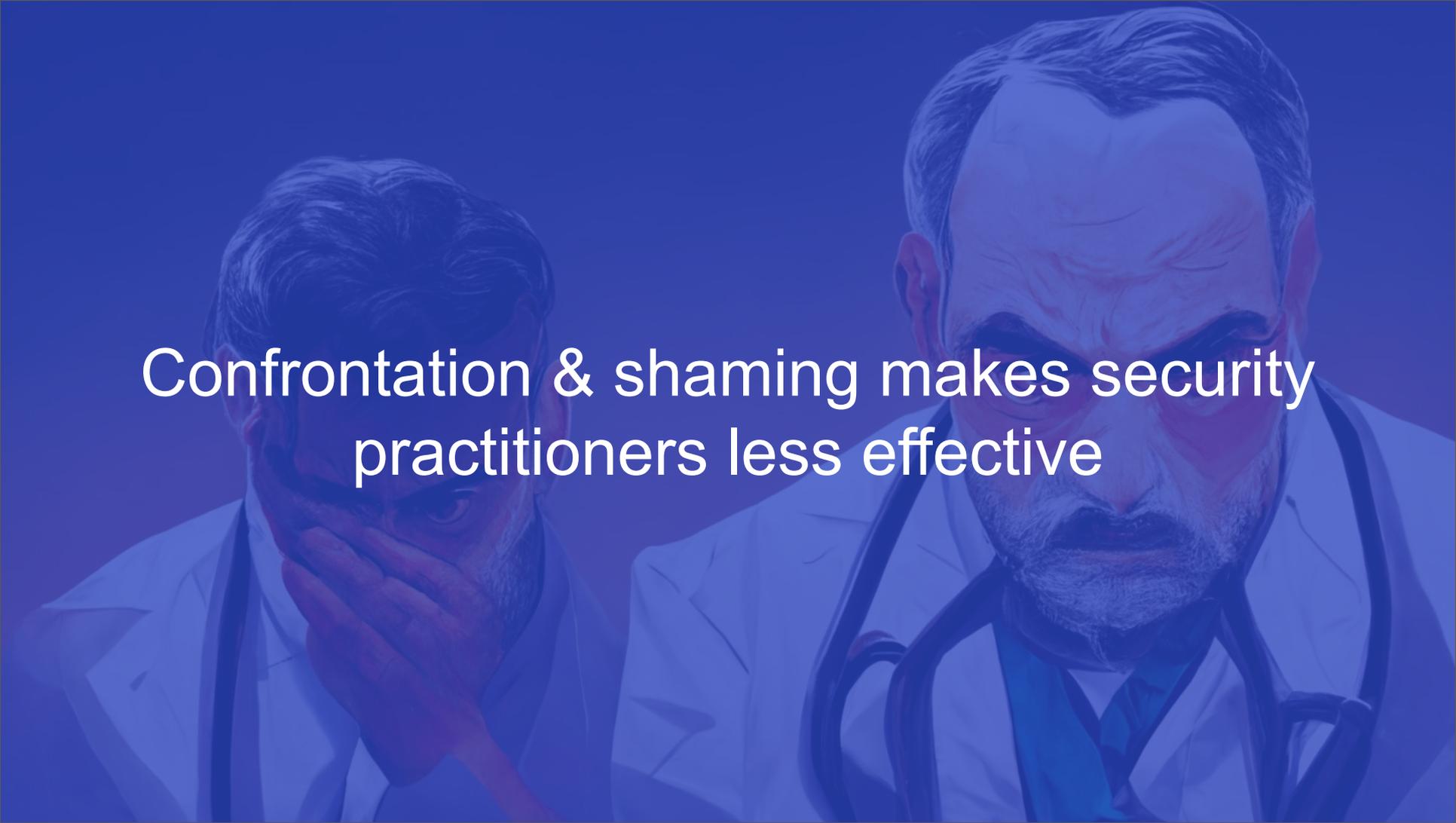
Caring for people who make high risk choices
can motivate them to make better choices

A firefighter in full gear is shown in profile, spraying a powerful stream of water from a hose onto a large fire. The scene is filled with smoke and the glow of the fire. In the background, other firefighters are visible, working to contain the blaze. The entire image has a blue color overlay.

Caring for people is more fun, it reduces burnout and improves practitioner efficacy

What does the research show?

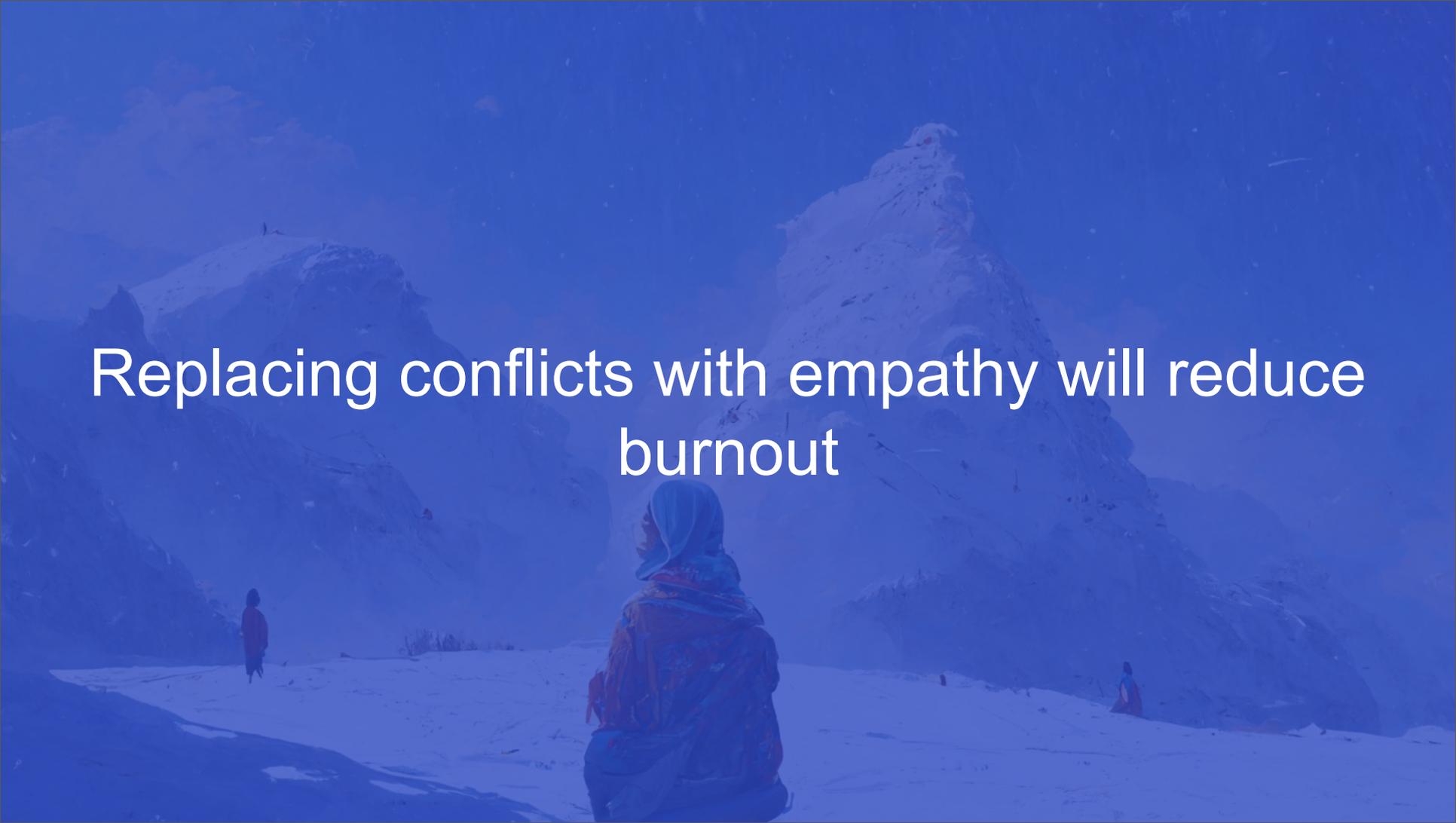
- **Shaming and stigmatizing reduce efficacy, increase harm**
 - Scared straight increased crime amongst participants up to 28%
 - HIV-related stigma causes lower rates of testing, treatment engagement, and medication adherence.
 - Obesity-related stigma reduces motivation, and engagement in treatment, increasing weight and obesity related health problems.
- **Compassionate care improves trust, reduces harm**
 - Diabetes patients with compassionate doctors showed increased adherence to guidance, 40% less likely to have complications, 80% more likely to have optimal blood sugar control
 - Patients who trust their physicians show 47% less brain activity in pain centers
- **Compassion makes practitioners more effective**
 - Non-adherence to health care guidance costs USA \$100-\$300 billion annually.
 - Compassionate communication leads to 62% higher odds of patient adherence to treatment
 - Doctors with poor patient relationships 22x more likely to experience burnout, burnout reduces quality in 33% of all doctors.

An illustration of two male doctors in white coats and stethoscopes. The doctor on the left is covering his face with his hands, looking downcast. The doctor on the right has a stern, angry expression. The entire image is overlaid with a blue tint.

Confrontation & shaming makes security practitioners less effective

A blue-tinted photograph showing a close-up of a female healthcare worker on the left, wearing a white surgical cap and scrubs, smiling warmly. On the right, an elderly male patient with grey hair and a mustache is also smiling back at her. The background is slightly blurred, suggesting a clinical setting.

Compassion will make security
practitioners more effective

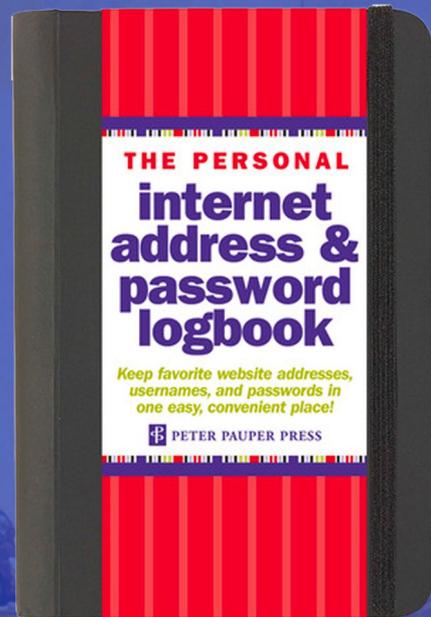
A person wearing a vibrant, multi-colored shawl and a light blue headscarf is seen from behind, looking out over a vast, snow-covered mountain range. The scene is bathed in a deep blue light, creating a serene and contemplative atmosphere. In the distance, other figures can be seen on the snowy slopes, and a prominent, jagged mountain peak rises against the sky.

Replacing conflicts with empathy will reduce
burnout

Example #1



Example #2



Example #3





“Hitch your wagon to developer productivity”

Astha Singhal, AppSec Cali 2019

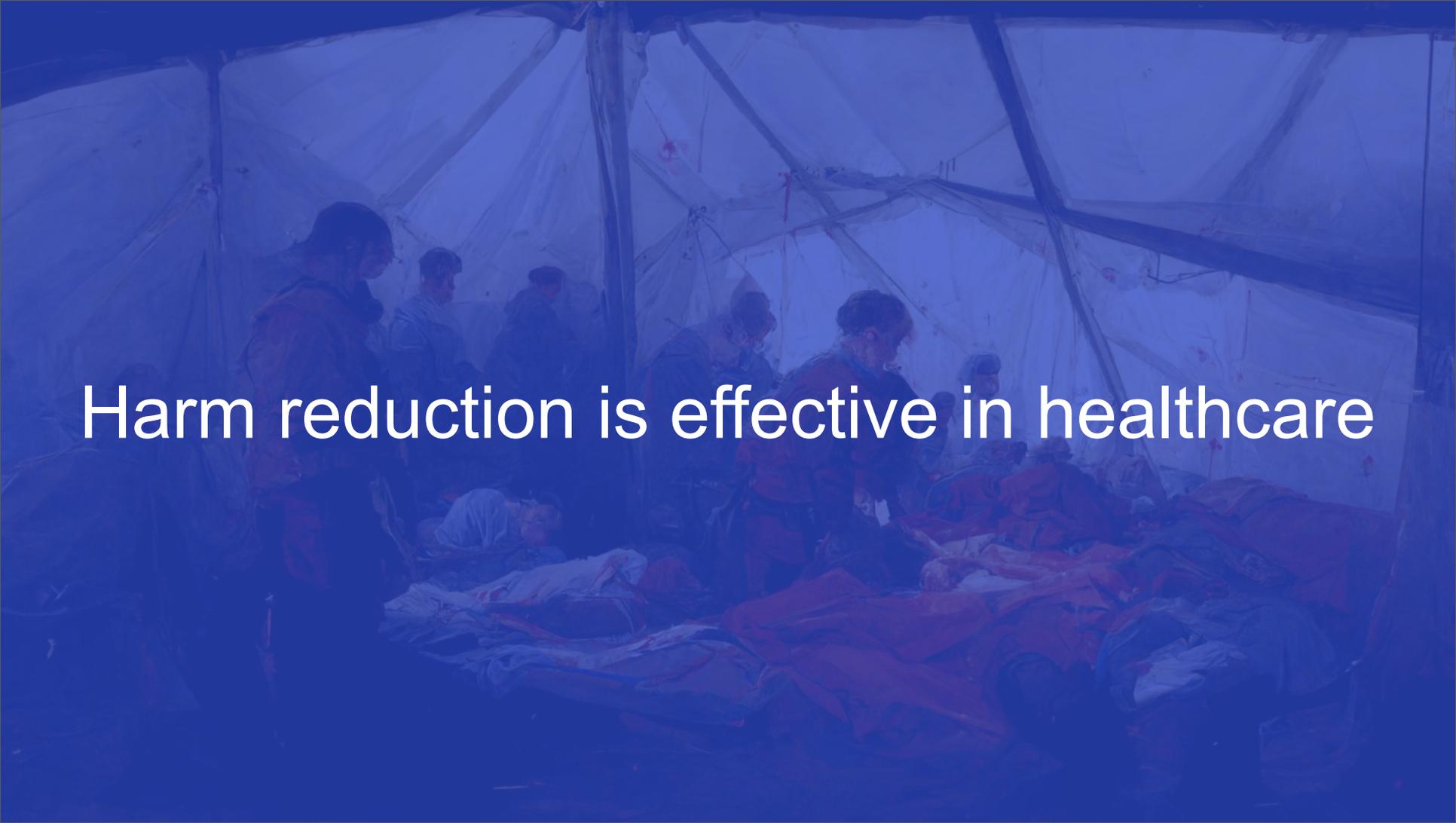


“Knowledge Shaming Is Making Us Less Secure”

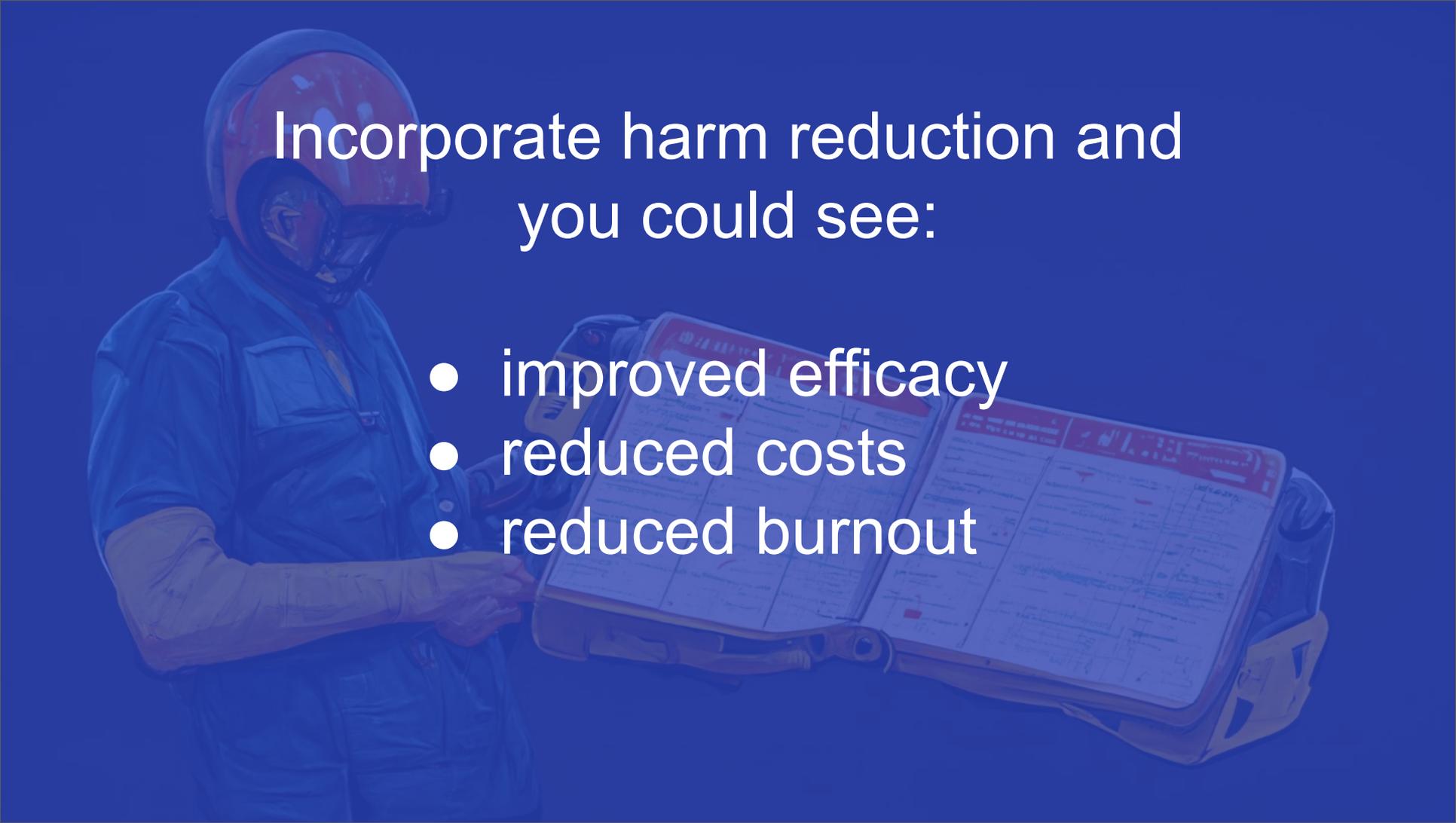
Regina Blumen, Blackhat EU 2021

A futuristic cityscape with tall buildings and large, glowing, spherical structures in the sky, all under a blue and purple color scheme. The scene is dominated by a monochromatic blue and purple palette. Several large, translucent spheres float in the sky, each containing a smaller, detailed cityscape. The ground is filled with a dense urban environment, with various skyscrapers and buildings. The overall atmosphere is one of a high-tech, advanced civilization.

Concluding thoughts

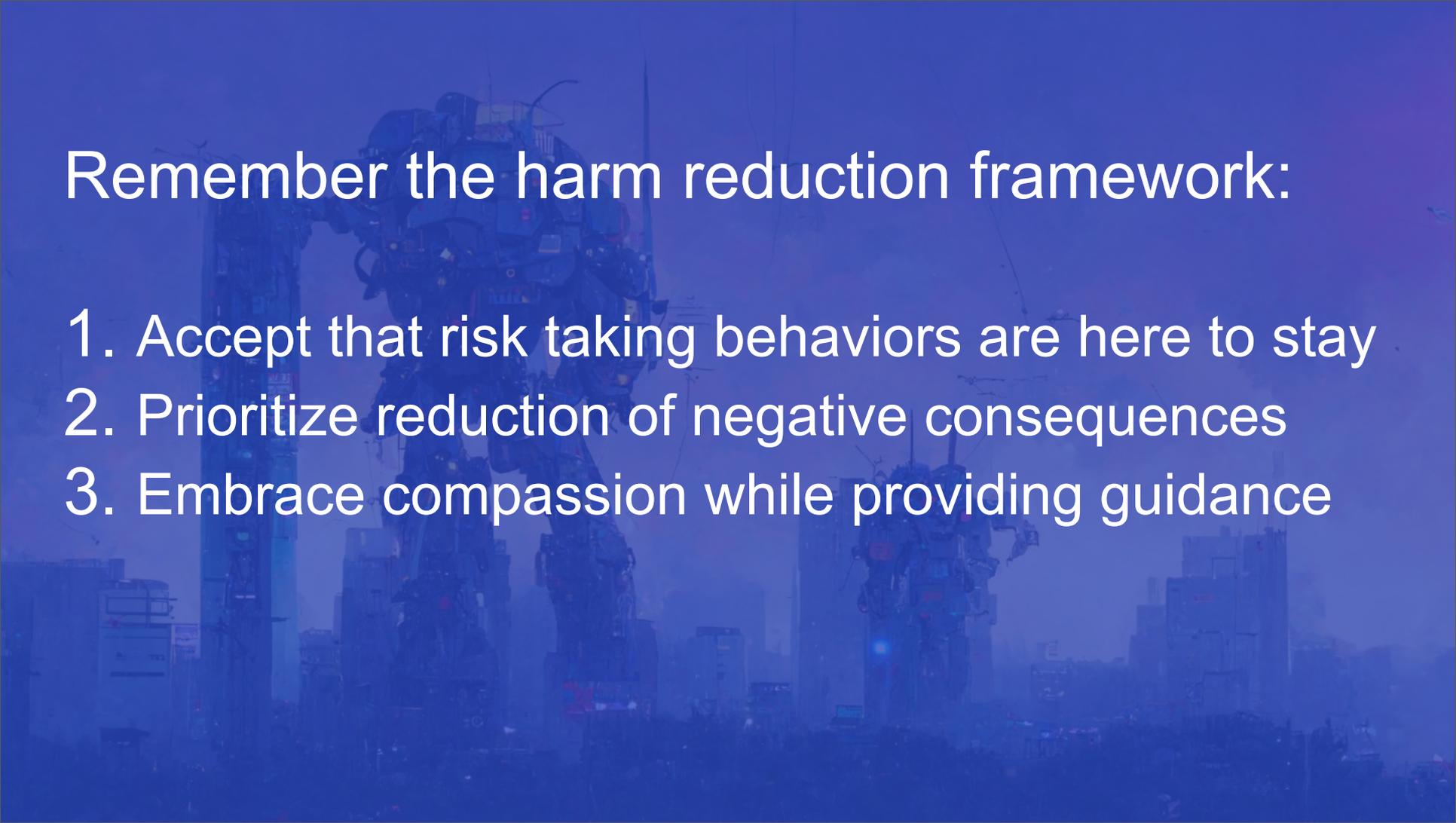
A blue-tinted photograph of a temporary medical facility inside a tent. Several people are visible, some standing and some attending to patients lying on the floor. The scene is dimly lit, with the primary light source being the ambient light filtering through the tent fabric. The overall atmosphere is one of a makeshift healthcare setting.

Harm reduction is effective in healthcare

A person wearing a blue protective suit and a red helmet is holding a large tablet. The tablet displays a data dashboard with various charts and tables. The background is a solid blue color.

Incorporate harm reduction and
you could see:

- improved efficacy
- reduced costs
- reduced burnout



Remember the harm reduction framework:

1. Accept that risk taking behaviors are here to stay
2. Prioritize reduction of negative consequences
3. Embrace compassion while providing guidance



Wherever risk exists on a spectrum
harm reduction has a place



~~Don't do that~~

Try not to, but if you do then here are some
ways to be safe



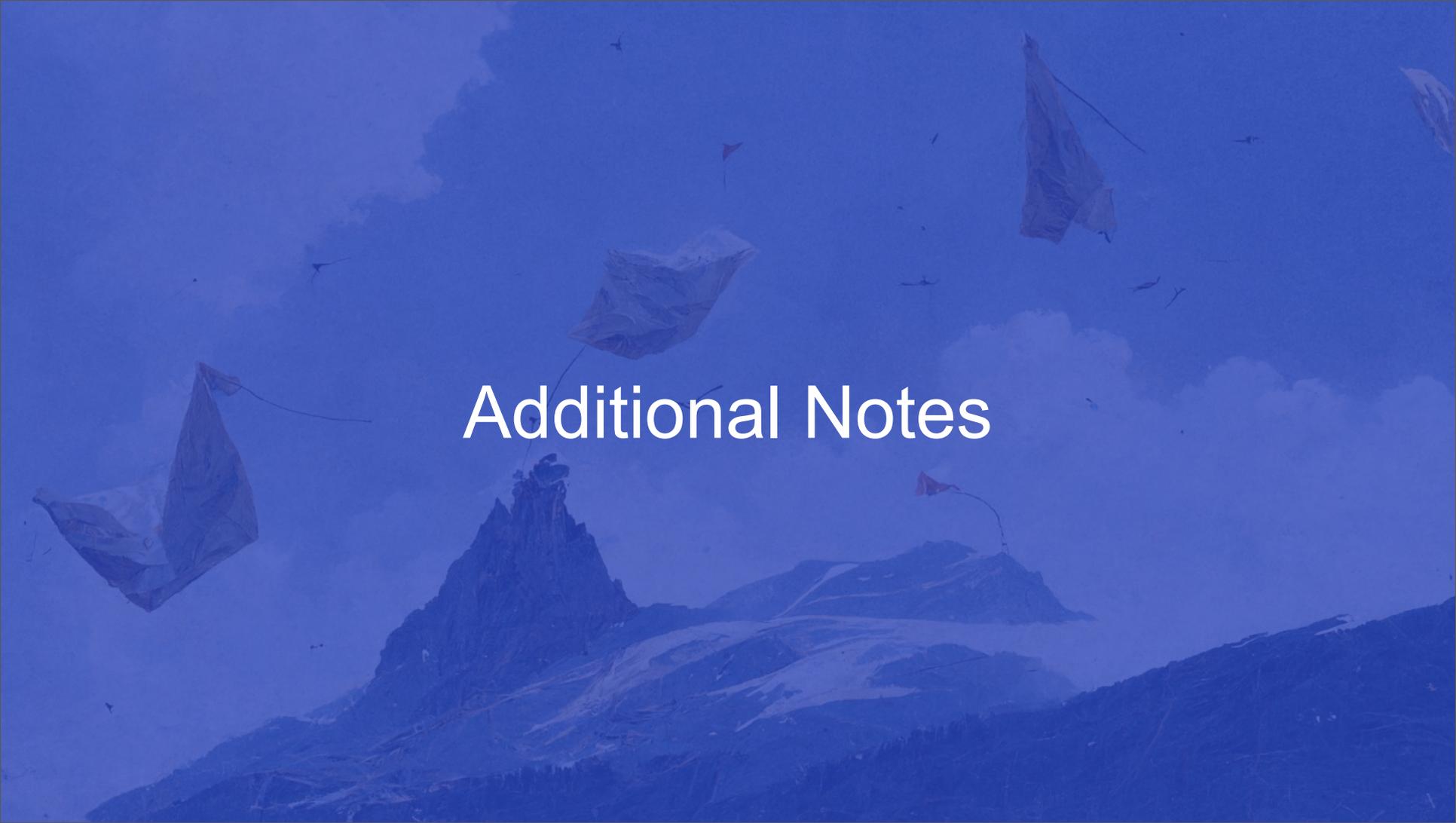
Questions?

Contact info:

[Twitter.com/kylekyle](https://twitter.com/kylekyle)

[Tiktok.com/@kyle.tobener](https://tiktok.com/@kyle.tobener)

[Linkedin.com/in/kyletobener/](https://linkedin.com/in/kyletobener/)

A blue-tinted photograph of a mountain peak with several flags flying in the sky. The text "Additional Notes" is centered in white.

Additional Notes

Sources

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Background Art



All images contained in the slides were generated using MidJourney AI v3.

If you'd like to see how I did this I'll post a walkthrough on Twitter after Blackhat: [@kylekyle](https://twitter.com/kylekyle)