

An Interactive Self-Analysis eTool for Managing Hearing Health



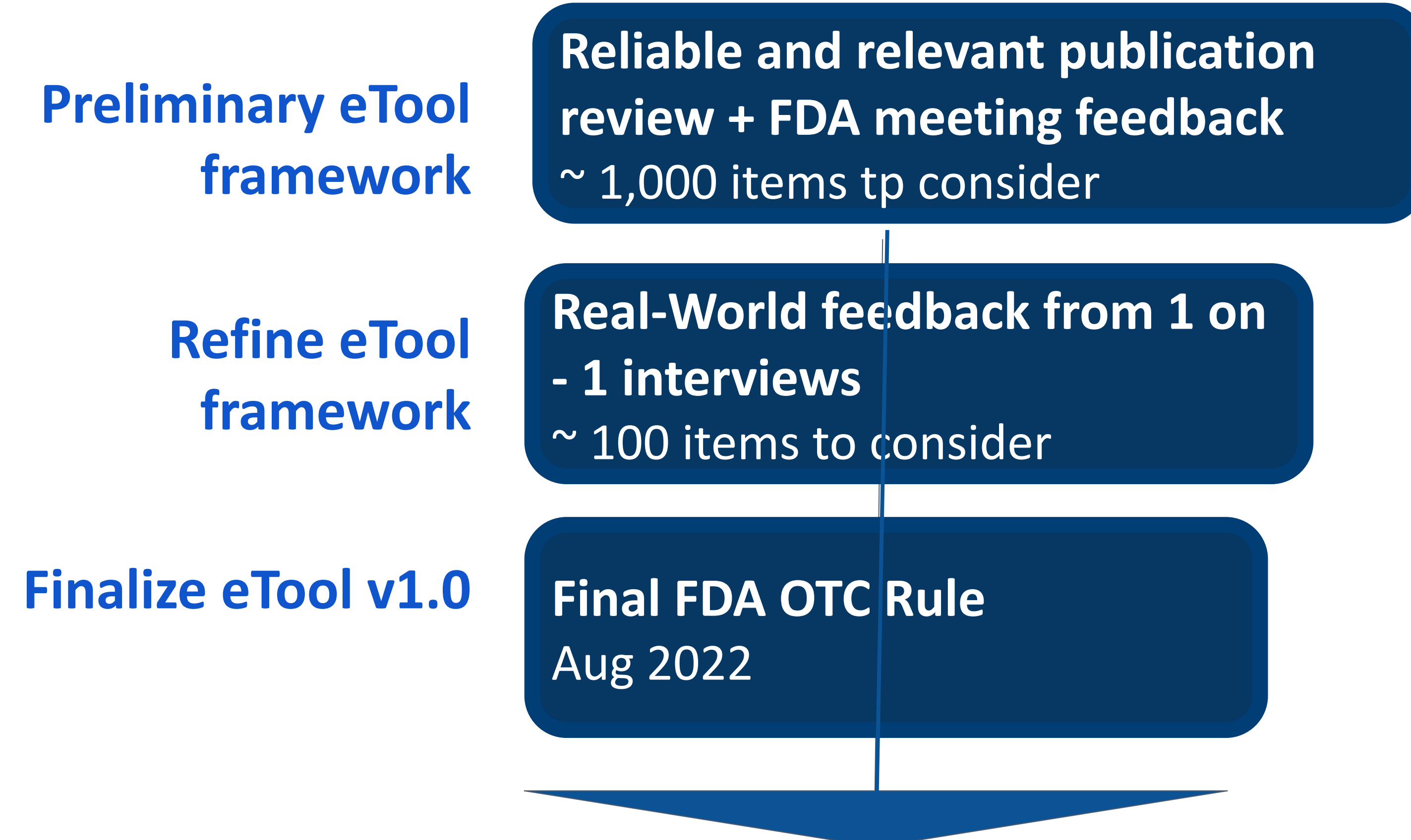
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Background

- Hearing fitness is a requirement for battle readiness
- However, an estimated 1.1 B young adults, worldwide, are at risk of hearing loss (HL) due to noise¹
- Many are unaware of the progressive, permanent HL
- Per the USPSTF, those with **self-perceived hearing loss** were more likely to seek appropriate treatment²
- The Aug 2022, the **Final FDA Rule on OTC Hearing Aid Rule emphasizes self-managed hearing care**³
- The DoD Hearing Conservation program also promotes **self-engagement in hearing health**
- The **proposed Self-Analysis Hearing Health eTool**
 - is relevant to daily living activities
 - provides education and evaluation tools
 - enables self-analysis and decision-making on personal hearing health

Method



eTool with 6 sections that can be reviewed and re-assessed as needed by user

Integrates relevant directives from:



Results

1 Essentials

Learn about daily noises, in and outside work, and its effects

- ❖ Hearing basics
- ❖ Noise, sound energy (decibels, dB), damage
- ❖ Everyday sounds & noise limit standards
- ❖ Types, degrees, descriptions of HL and related problems
- ❖ Non-auditory effects including fatigue, hypertension, diabetes, depression, dementia
- ❖ Quality of Life effects including career and family

2 Profile

Understand your hearing health and well-being needs

- ❖ Daily Listening: Work and Nonwork activities
- ❖ Related Health Risks: Modifiable, Nonmodifiable
- ❖ Daily Hazards: How Identified and Reduced
- ❖ Ototoxins: Chemical, Medications
- ❖ Motivation: For Self and Others

3 Protect

Adopt regular practices to manage harmful effects

- ❖ dB, duration, distance + Hearing Protection devices
- ❖ Strategies for listening breaks
- ❖ Workplace noise control options
- ❖ Ototoxic exposure reduction
- ❖ Managing non-hearing health conditions
- ❖ DoD HCE, OSHA, CDC-NIOSH, NIH-NIDCD, EPA information on hearing health

4 Symptoms

Check for early signs, know current treatments

- ❖ Self-identify signs + Consider treatment options
 - Tinnitus
 - Mild-Moderate HL, Advanced HL
 - 'Red Flag' symptoms requiring medical attention
 - Hyperacusis
 - Single-sided HL
 - Sudden HL

5 Monitor

Make your own lifelong hearing wellness program

- ❖ Hear care: Checklists, supportive conditions
- ❖ Ear care: Earwax Do's and Don'ts
- ❖ Safe Listen: Apps for Safe Listen Times, Dosimetry
- ❖ Food: Balance, Supplements for hearing health
- ❖ Overall well-being: Mental, Physical, Social
- ❖ Doctor visits: Notes, Questions, Specialities

6 Technology

To support daily safe hearing practices

- ❖ Sound Level Meters
- ❖ Dosimeters
- ❖ Apps
- ❖ eTool

Results

Personal Hearing Conservation Program

- ❖ Hearing wellness as part of lifelong self-care practice
- ❖ Extend to whole person health including other illnesses, emotional and social well-being
- ❖ Regular self-check and monitor for early symptoms and appropriate actions
- ❖ Follow and help improve workplace hearing conservation program
- ❖ Prevent day-to-day accidents and injuries with good hearing
- ❖ Voice concerns if noise problems in workplace or other places
- ❖ Care about effect on yourself and co-workers, friends, family
- ❖ Keep up-to-date on reliable hearing health knowledge for continuous guidance

Conclusions

The proposed **Self-Analysis Hearing Health eTool**:

- Provides information from US federal and UN sources in an interactive manner; timely updates with emerging directives, real-world data
- Creates awareness and knowledge of the importance of good hearing
- Provides framework for creating personal hearing health plan
- Promotes self-management of lifelong hearing health and monitoring
- Ensures privacy and confidentiality
- Adds to DoD Hearing Conservation Program with user engagement and sense of responsibility

References and Acknowledgements

1. World Health Organization
 2. US Preventive Services Task Force
 3. FDA finalizes historic Rule enabling access to OTC Hearing Aids for millions of Americans
- HCE: DoD Hearing Center of Excellence
OSHA: Occupational Safety and Health Administration
CDC: Centers for Disease Control and Evaluation
NIOSH: National Institute of Occupational Safety and Health
NIH: National Institutes of Health
NIDCD: National Institute of Deafness and Communication Disorders

