Menzies Research Institute Tasmania

Centre of Research Excellence for Chronic Respiratory Disease

Technological Developments for Delivery & Rapid Innovation

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Overview

- Delivery rather than content
- Traditional delivery
  - Strengths & Limitations
- Ideal characteristics of a delivery system
  - Technological developments to facilitate delivery
- Future directions

Delivery – getting smokers what they need

- Traditional delivery systems
  - Quit booklets, telephone quit lines, individual counseling, group counseling …

Modest effect on cessation

Intervention	Number of arms	Estimated odds ratio (95% C.I.)	Estimated abstinence rate (95% C.I.)
Minimal or no counseling or self-help	11	1.0	8.5
Quitline counseling	11	1.6 (1.4–1.8)	12.7 (11.3–14.2)

Fiore et al, 2008

Delivery may be part of the problem

- Teach here – Apply there
  - Disconnect in leaning & application
  - Need to reach smokers when & where they need help
- Typically passive & impersonal
  - Traditional personalised counselling is expensive (prohibitive?), especially for “reactive” content delivery

Delivery may be part of the problem

- Barriers to perfect content delivery
- Technological advances have made optimal delivery more feasible

Characteristics of an ideal delivery system

- Ideally, the delivery modality of a behavioural support program would allow:
  - Tailoring of content

Tailoring

- Traditional outlets are often static (e.g., a booklet or static website)
  - One program / course to follow
  - Councilors can (and likely do) tailor approach to clients
- Static & dynamic factors
  - Static: demographics, life-style
  - Dynamic: clinical needs, progress
- Typically more effective … but we don't know why
  - Little work done on mechanism of action

Ideal Characteristics

- Ideally, the delivery modality of a behavioural support program would allow:
  - Tailoring of content
  - Multimodal information presentation

Multimodal Presentation

- Traditional program delivery is “single channel”
  - Audio OR Text OR …
- Promotes learning / understanding
  - Education research suggests that learning outcomes are improved if a variety of modalities are used

Ideal Characteristics

- Ideally, the delivery modality of a behavioural support program would allow:
  - Tailoring of content
  - Multimodal information presentation
  - Proactive & reactive content delivery

Proactive & Reactive

- "Push" content to the client
- Allow the user to access content when they need it
  - Relapse crisis situations
- React to changes
  - e.g., in the quit process & tailor accordingly

Ideal Characteristics

- Ideally, the delivery modality of a behavioural support program would allow:
  - Tailoring of content
  - Multimodal information presentation
  - Proactive & Reactivity content delivery
  - Scalability

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More is better …

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Treatment	Number of arms	Estimated odds ratio (95% C.I.)	Estimated abstinence rate (95% C.I.)
0–1 session plus medication	13	1.0	21.8
2–3 sessions plus medication	6	1.4 (1.1–1.8)	28.0 (23.0–33.6)
4–8 sessions plus medication	19	1.3 (1.1–1.5)	26.9 (24.3–29.7)
More than 8 sessions plus medication	9	1.7 (1.3–2.2)	32.5 (27.3–38.3)

Fiore et al, 2008

… but have to consider feasibility

- Resource limitations
- Costs associated with scaling

Ideal Characteristics

- Ideally, the delivery modality of a behavioural support program would allow:
  - Tailoring of content
  - Multimodal information presentation
  - Proactive & Reactivity content delivery
  - Scalable
  - Data collection

Data Collection

- Data necessary for innovation
  - How is a program being use?
  - When is content being viewed?
  - How much content is necessary?
- Constantly refining content & delivery

Recent advances in delivery

- Technological advances can improve content delivery
  - Allow more flexibility in program delivery
- Online chat groups
  - Modern day group counseling
- Internet programs
  - Greater flexibility than static quit booklets they were designed to replace

Mobile Computing Devices

- SMS or stand-alone apps
- (Almost) your very own cessation counselor 24/7
  - Essentially limitless access
  - Real-time support in real world
  - Medication compliance & adherence
  - Tailor support
    - CPD, time since quit, proactive & reactive
  - Potential for geo-tagging

"Typical" text intervention

- 4-5 per day; randomly timed; potential unlimited duration
  - Also available as needed (reactive)
- Some tailoring is common
  - Baseline characteristics, medication use etc

Text Message Support

- Meta-analysis of previous studies
- RR = 2.2; 28% quit
  - Need for more efficacy data (n=4 at the time), particularly longer-term data
- Larger effect size than traditional offerings
  - Similar to pharmacotherapy

Outstanding Questions

- Program content: What *exactly* works?
- Mechanism of Action
  - How does the intervention promote abstinence?
  - Reduces withdrawal & craving? Improve use of coping strategies? AVE reduction?
- When is it useful?
  - Which quitting milestone does the intervention act on?
- What types of tailoring are effective?

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Questions?

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