

# System change interventions for smoking cessation

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# Background

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- The consequences of smoking are well recognised<sup>1, 2</sup>
- Health professionals can play a major role in helping smokers to quit
- Inadequate levels of support at healthcare systems<sup>3, 4</sup>
- Missed opportunity

1. *Taylor et al. Am J Public Health 2002*
2. *Critchley et al. Cochrane Database Syst Rev 2004*
3. *Freund et al. Prev Med 2005*
4. *Freund et al. Nicotine Tob Res 2008*

# Background cont.

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- Many barriers limiting smoking care provision<sup>1</sup>
  - Lack of time
  - Lack of training/skills and low confidence
  - Lack of a system for identifying smokers
  - Lack of organisational support
- Better strategies are needed
- A strategic system change approach could overcome the barriers

<sup>1</sup> Wolfenden et al. *Drug and Alcohol Review* 2009

# Background cont.

## System change interventions

- Policies and practices designed by healthcare organisations to integrate tobacco control measures into the routine delivery of healthcare<sup>1, 2</sup>
- Tobacco use systematically assessed and treated at every clinical encounter<sup>1, 2</sup>
- All healthcare professionals in the system<sup>2</sup>
- Interventions will be delivered by clinic staff<sup>2</sup>
- Sustain beyond the research project

# Background cont.

- **AHRQ suggests 6 system level approaches<sup>1</sup>**
  1. A system to identify smokers
  2. Training/resources/feedback
  3. Dedicated staff for smoking cessation treatment
  4. Promote organisational policies that support smoking cessation
  5. Tobacco dependence treatment
  6. Reimbursement to staff

# Cochrane review

[Intervention Review]

## System change interventions for smoking cessation

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# Aim & Design

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- **Aim**
- To assess the effectiveness of system change interventions for smoking cessation within healthcare settings
- **Types of studies**
- RCTs, cluster RCTs, quasi RCTs and ITS
- **Databases**
  - CENTRAL
  - MEDLINE
  - EMBASE
  - PsycINFO
  - CINAHL

# Method

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## Inclusion criteria

- Identify and treat all smokers accessing the system
- Include most health professionals in the system

## Exclusion criteria

- Targeting single type of health professional
- Researchers involved in the intervention delivery

# Method cont.

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## Outcome measures

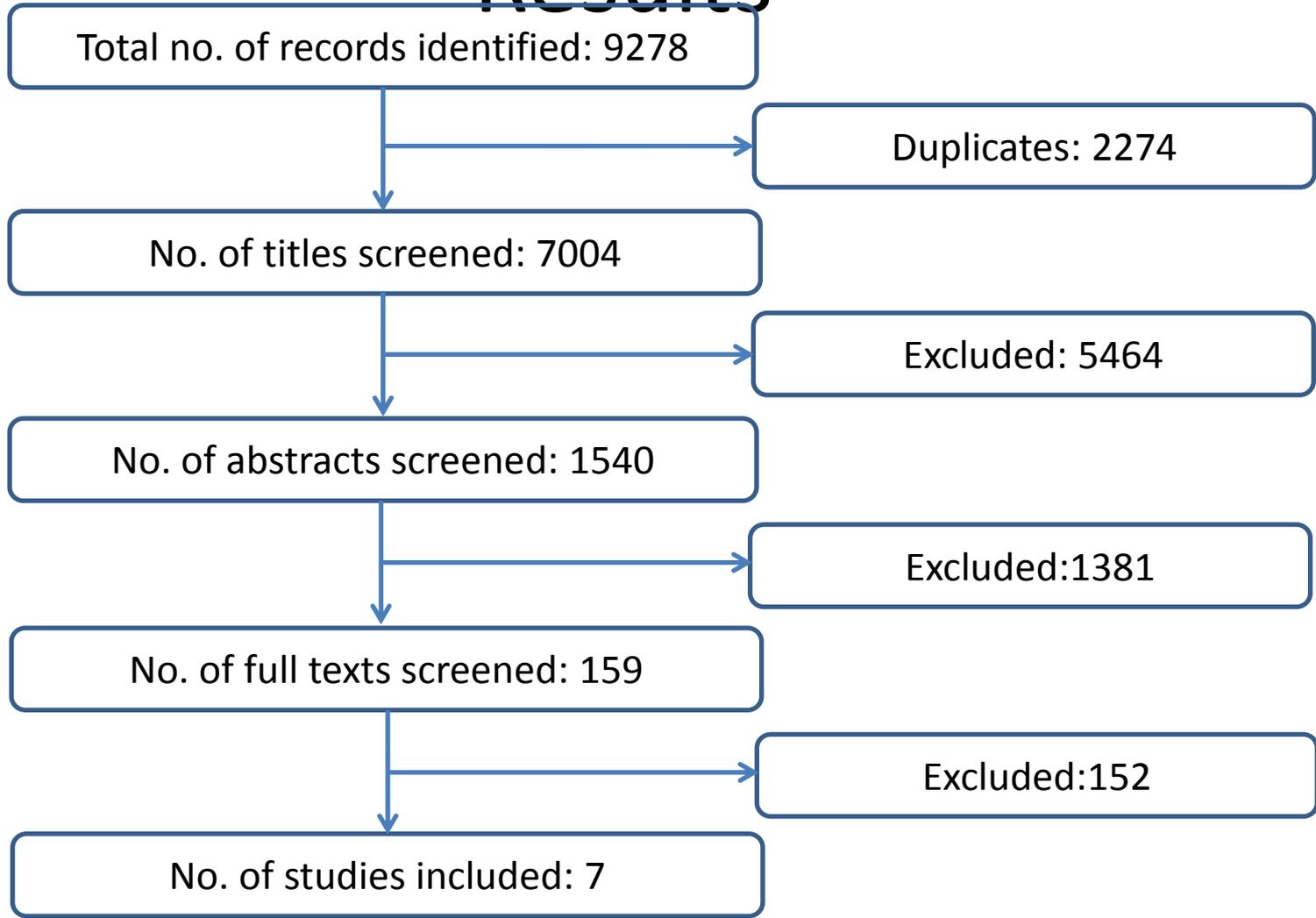
- Primary outcome – Smoking cessation
- Secondary outcomes – Process outcomes

**Risk of bias:** Assessed using Cochrane standard criteria

**Quality of evidence:** Assessed using GRADE criteria

**Data synthesis:** Narrative synthesis

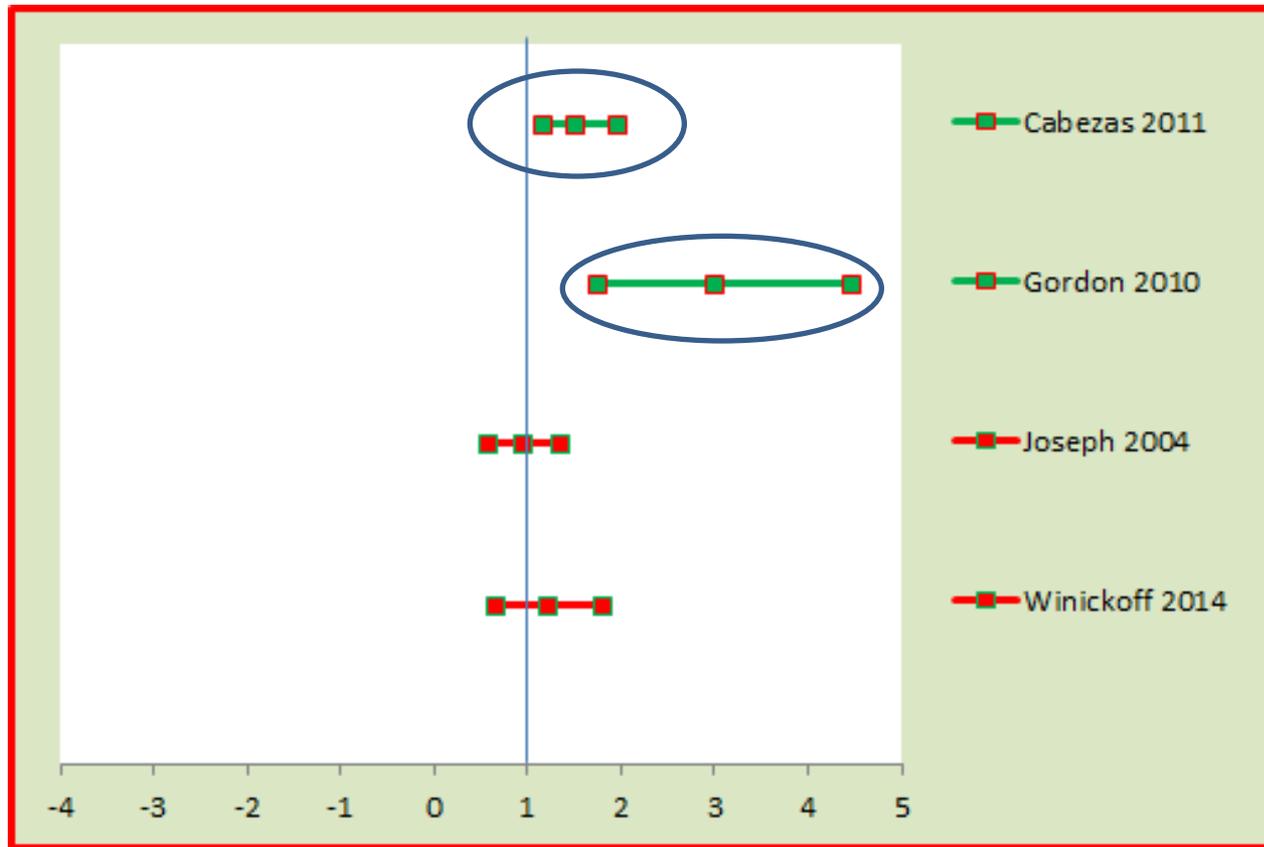
# Results



# Results cont.

| Winickoff 2013 | Rothemich 2010 | Patwardhan 2012 | Little 2009 | Joseph 2004 | Gordon 2010 | Cabezas 2011 |   |
|----------------|----------------|-----------------|-------------|-------------|-------------|--------------|---|
| +              | +              | +               | ?           | +           | ?           | +            | Random sequence generation (selection bias)               |
| +              | +              | +               | ?           | +           | ?           | +            | Allocation concealment (selection bias)                   |
| ?              | -              | +               | ?           | ?           | ?           | -            | Blinding of participants and personnel (performance bias) |
| ?              | -              | +               | +           | +           | ?           | +            | Blinding of outcome assessment (detection bias)           |
| +              | +              | +               | +           | +           | -           | +            | Incomplete outcome data (attrition bias)                  |
| +              | +              | +               | +           | +           | +           | +            | Selective reporting (reporting bias)                      |
|                |                |                 |             | -           |             | -            | Other bias  |

# Results – Primary endpoint



Quality of evidence:  
very low

# Results – Secondary endpoints

| Study               | Asking about tobacco use | Documentation of smoking status | Advice to quit | Counselling to quit | Initiation of NRT or other pharmacotherapy | Quitline referral | Quitline enrolment |
|---------------------|--------------------------|---------------------------------|----------------|---------------------|--|-------------------|--------------------|
| Cabezas 2011        | –                        | –                               | –              | –                   | –  | –                 | –                  |
| Gordon 2010         | –                        | –                               | –              | –                   | –  | –                 | –                  |
| Joseph 2004         | ND                       | ***                             | –              | ND                  | ND   | –                 | –                  |
| Little 2009         | –                        | –                               | –              | ***                 | –  | –                 | –                  |
| Patwardhan 2012     | ***                      | –                               | ***            | –                   | –  | ***               | ***                |
| Rothemich 2010      | –                        | –                               | ND             | ***                 | –  | ***               | –                  |
| Winickoff 2013      | ***                      | –                               | ***            | ***                 | ***  | ***               | ***                |
| Quality of evidence | low                      | low                             | low            | low                 | low  | Very low          | Very low           |

- Not assessed; ND No difference; \*\*\* Favoured intervention

# Discussion

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- The evidence was equivocal for the cessation outcome
- Most of the process outcomes improved
- Two phase nature of the intervention
  - Directly promoting process outcomes
  - Indirect effect on cessation outcomes
- None of the studies included all the components
- The intensity and extent varied widely
- The quality of evidence: very low to low
- None included a hospital based intervention

# Future directions

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- A well-designed intervention should include all the components of the system change approach
- Include all the clinicians in the system
- Provide ongoing training and support
- Follow-up could further improve the outcomes

# Discussion point

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- Tackling resistance to health system change(s)?