

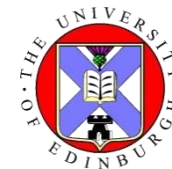


# Improving our understanding of the *in vivo* modelling of psychotic disorders

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# PSYCHOSIS



WHO 2001: THIRD  
most disabling  
medical condition in  
the world

Hallucinations

Delusions

Thought disorder

Negative symptoms  
can also occur

Psychosis can feature as part  
of many mental health  
conditions

**Distortion or loss of  
contact with reality**





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### [SCHIZOPHRENIA PRIORITY SETTING PARTNERSHIP TOP 10](#)

1. What is the best way to treat people with schizophrenia that is unresponsive to treatment?
2. What training is needed to recognize the early signs of recurrence?
3. Should there be compulsory community outpatient treatment for people with severe mental disorders?
4. How can sexual dysfunction due to antipsychotic-drug therapy be managed?
5. What are the benefits of supported employment for people with schizophrenia in terms of quality of life, self esteem, long-term employment prospects and illness outcomes?
6. Do the adverse effects of antipsychotic drugs outweigh the benefits?
7. What are the benefits of hospital treatment compared with home care for psychotic episodes?
8. What are the clinical benefits and cost-effectiveness of monitoring the physical health of people with schizophrenia?
9. What are the clinical, social and economic outcomes —

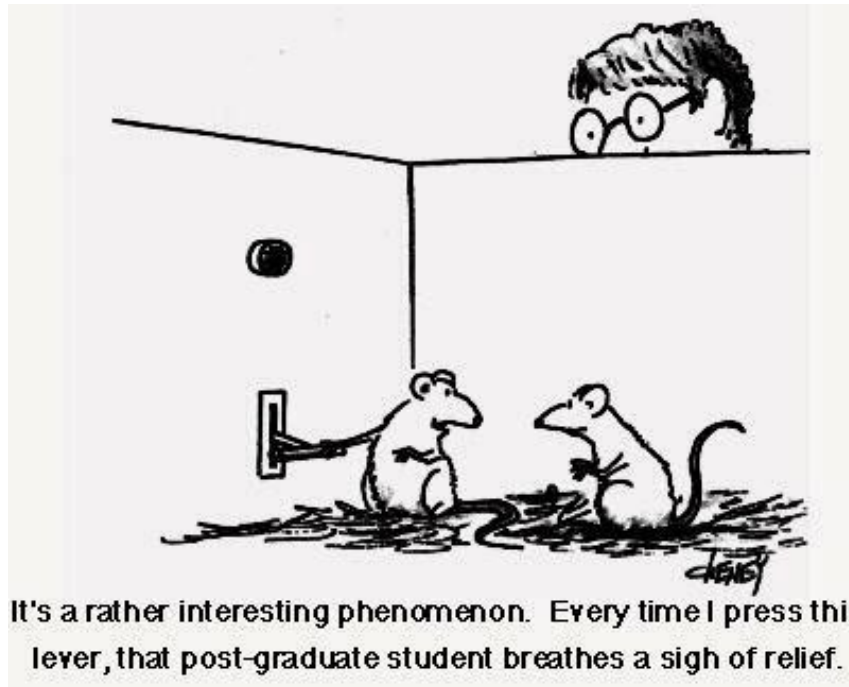
Treatments are not universally effective and have a wide range of adverse side effects



# PSYCHOSIS



Understanding of aetiology remains elusive



Limited progress in developing novel pharmacotherapy, partly due to a lack of valid animal models



# RATIONALE, AIM AND OBJECTIVES *of Study*



- Many clinical drug candidates are identified through *in vivo* modelling
- Deeper understanding of these models & their strengths and limitations might help us understand reasons for difficulties in psychosis drug development

Assess the prevalence of different models and outcome measures

Assess the quality of the animal studies

Provide **unbiased summary** of the use of animal models of psychosis

Investigate the impact of study quality and other characteristics of the study on reported outcome

Provide summary estimates of the efficacy of candidate drugs



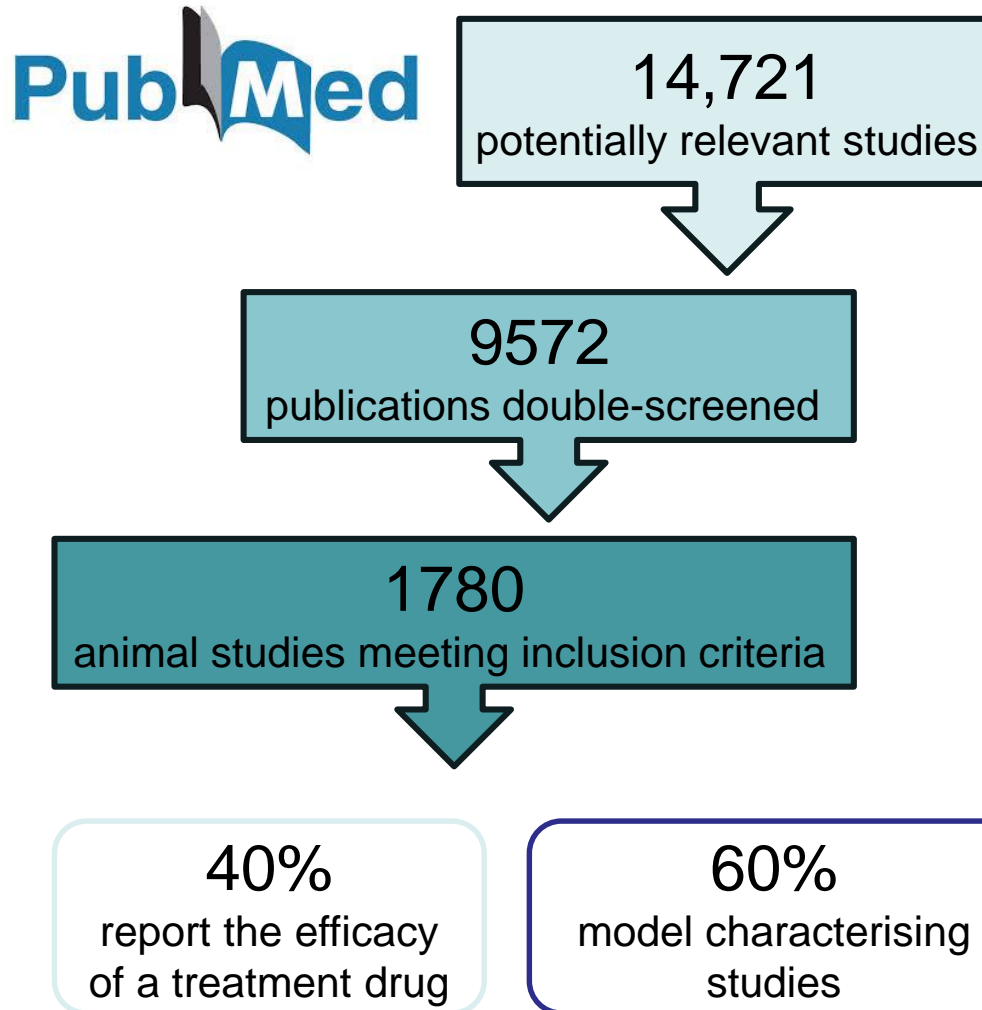
## METHODS *So far....*



- Systematic search of PubMed in January 2014
- Publications reporting *in vivo* modelling of a psychotic disorder:
  - non-affective psychotic disorders
  - affective psychotic disorders
  - substance-induced psychotic disorders
  - psychotic disorders due to a general medical condition
- Screening of identified studies according to a predefined inclusion/exclusion criteria.



# SYSTEMATIC SEARCH RESULTS





# KEY FINDING 1

## *Most Commonly Reported Models*



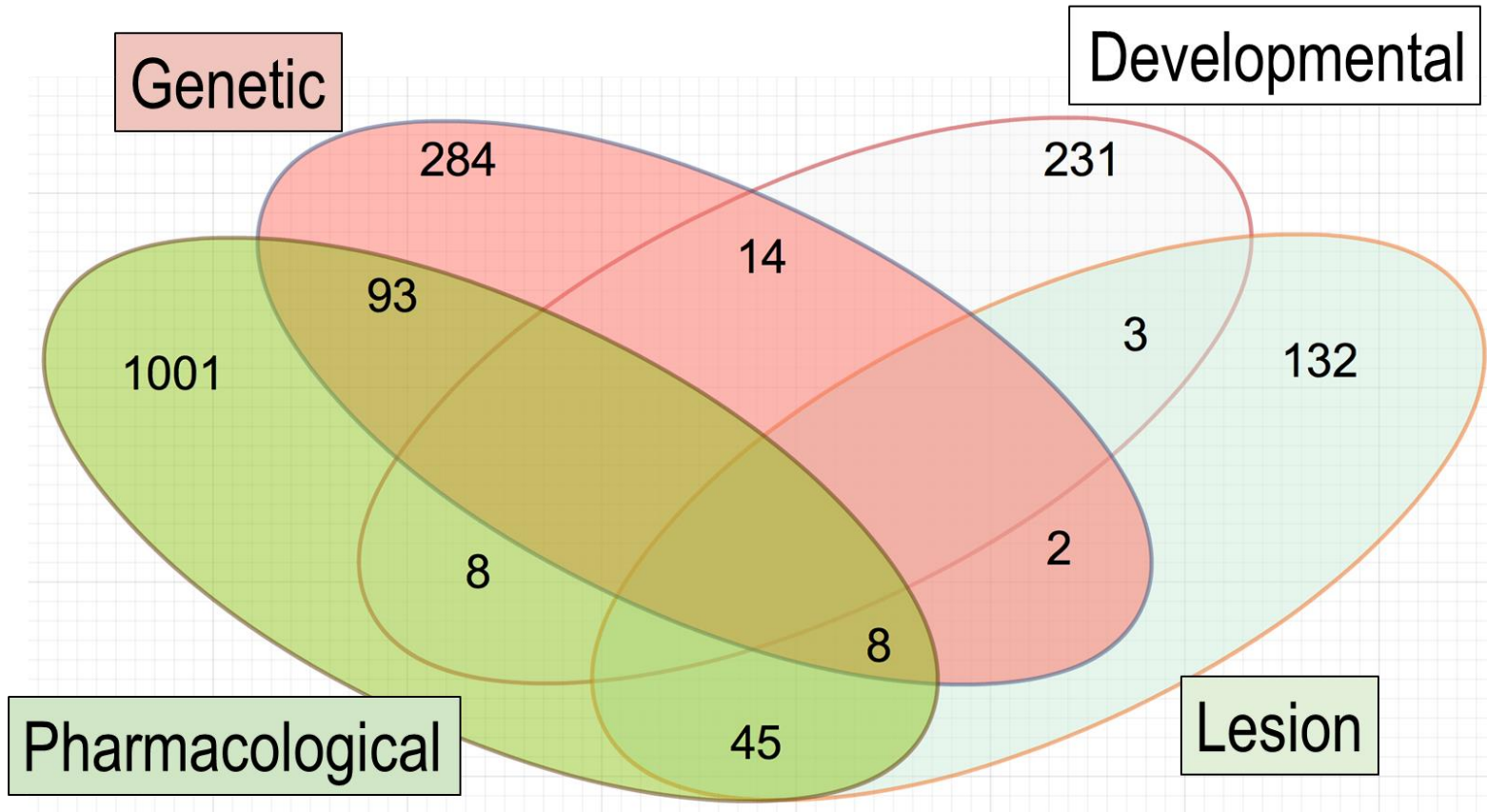
Model of Psychosis	Number of Publications	% of Total Included Studies
Schizophrenia	1679	94%
Substance-induced psychosis	97	5%
Unspecified psychosis	91	5%
Medical condition induced psychosis	12	1%
Postpartum psychosis	1	0.1%
	1780	





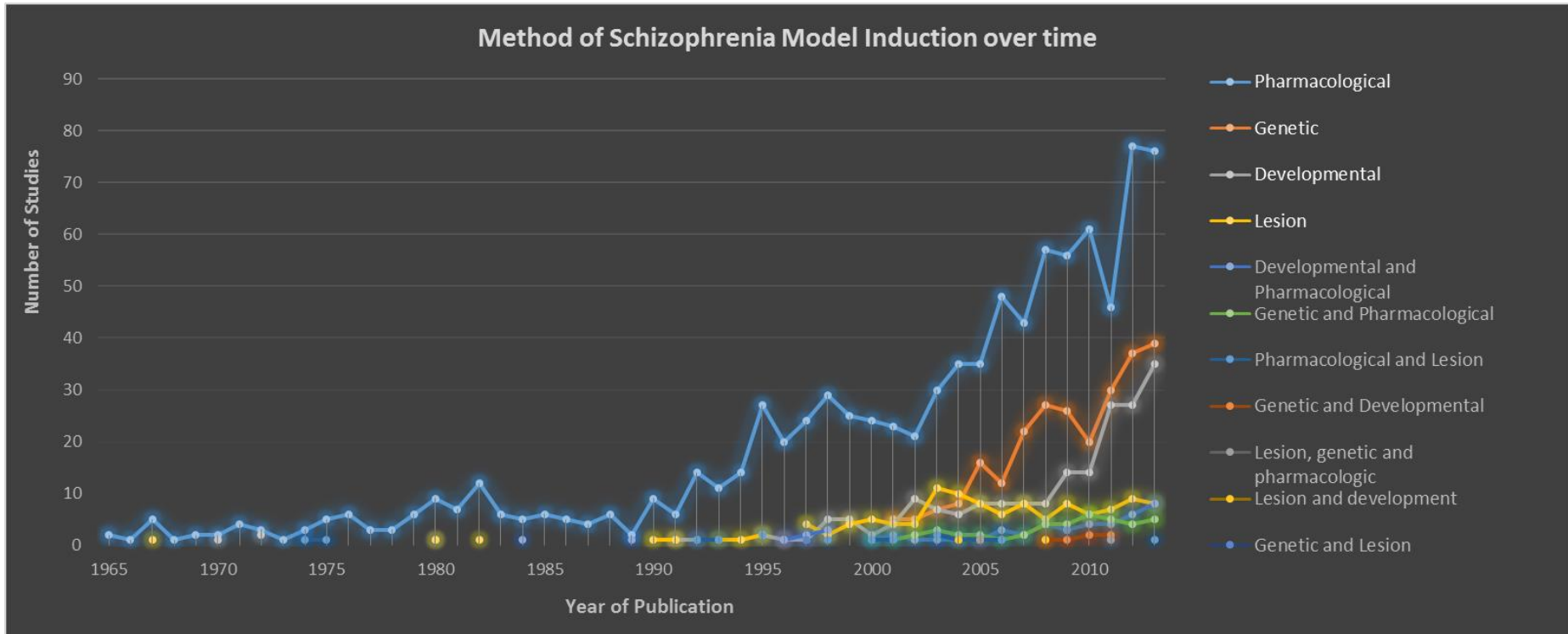
## KEY FINDING 2

# *Most Commonly Reported Method of SCZ Model Induction*





# KEY FINDING 3 *Changes in use of different methods of SCZ induction reported*





# EARLY INTERPRETATION OF DATA

## *Challenges and Solutions*



No universal distinction between different models of psychosis

- Some models used for two different psychotic disorder models
- Solution: Recording specific model to group studies in a logical manner
- “Are researchers modelling what they think they are actually modelling?”

Schizophrenia is a uniquely human disorder

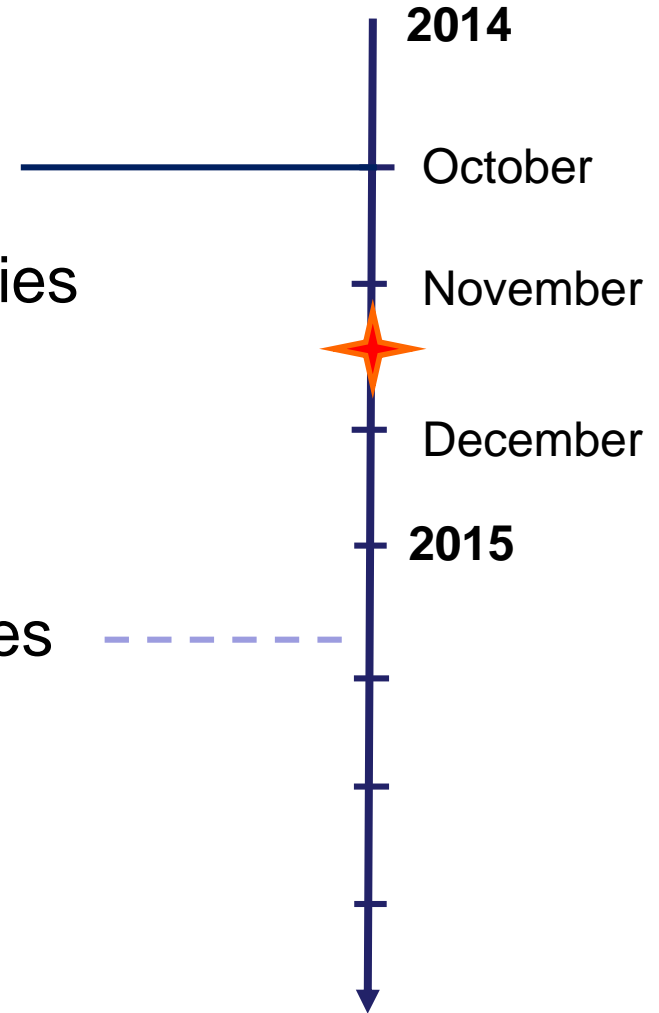
- Most only recapitulate one type of symptom – not disorder in its entirety
- “Can we really call these animals models of SCZ?”
- Move away from simplistic pharmacological models
- Identify studies according to type of symptom instead of disorder



# FUTURE PLANS



- Recording of specific induction method, type of outcome, information about quality of studies using an 8-item checklist
- Extract data from included studies to the CAMARADES database





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