

Counterfactual – benefits and challenges: Learning from a quantitative evaluation of a mental health liaison service

Rapid evaluation in health care 2020

Hallam Conference Centre | 2020-01-30

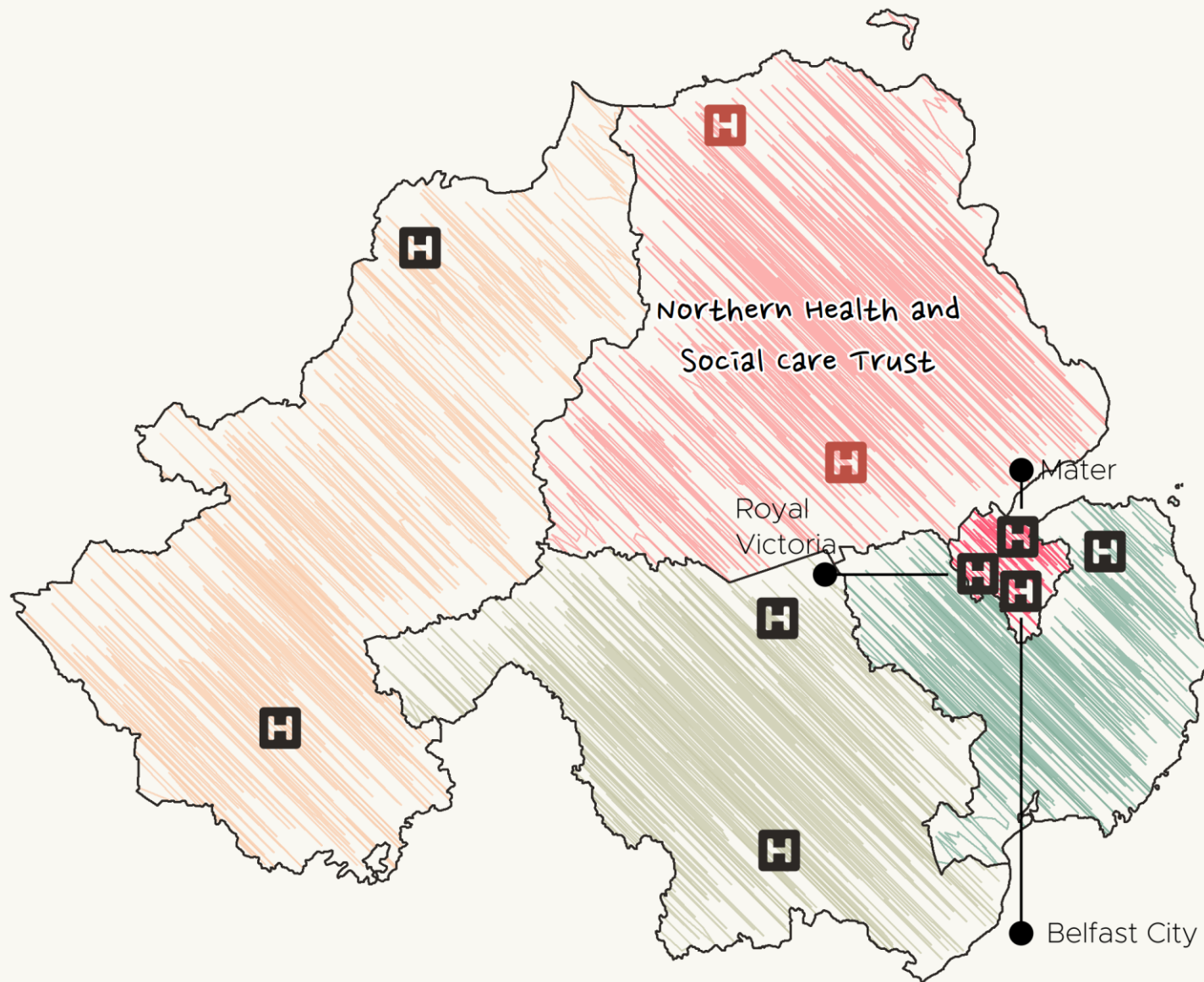


Midlands and Lancashire
Commissioning Support Unit

*History of depression and under care of YPC.
Self harm wounds to left wrist 1/7 ago ... GP
referral for further assessment of wounds*

*States took Librium ?8 tabs + diazepam
5mgs x?6, also 15 pints lager onboard. Pt
low mood wants to kill himself*

Health and Social care Trusts, NI

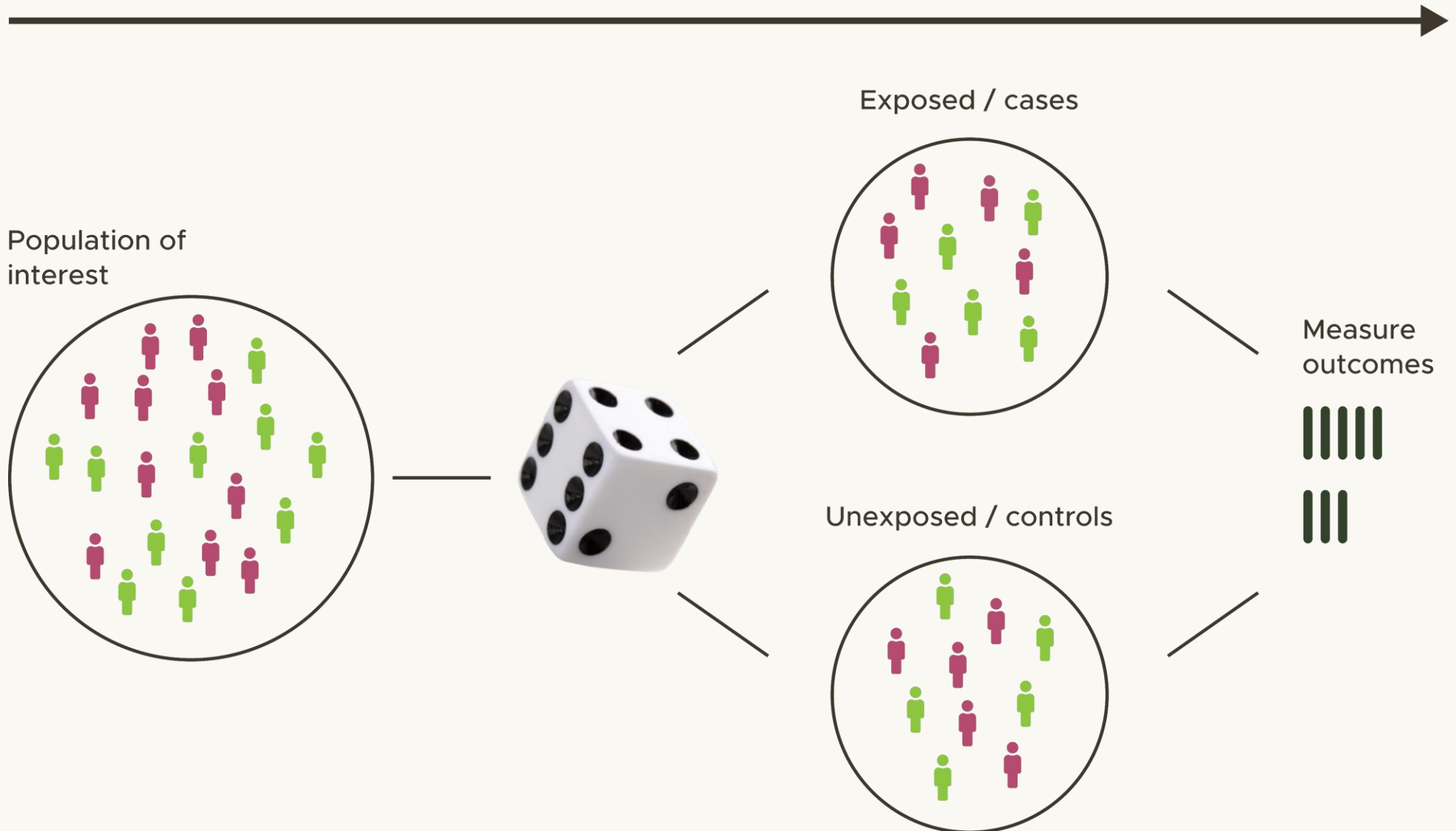




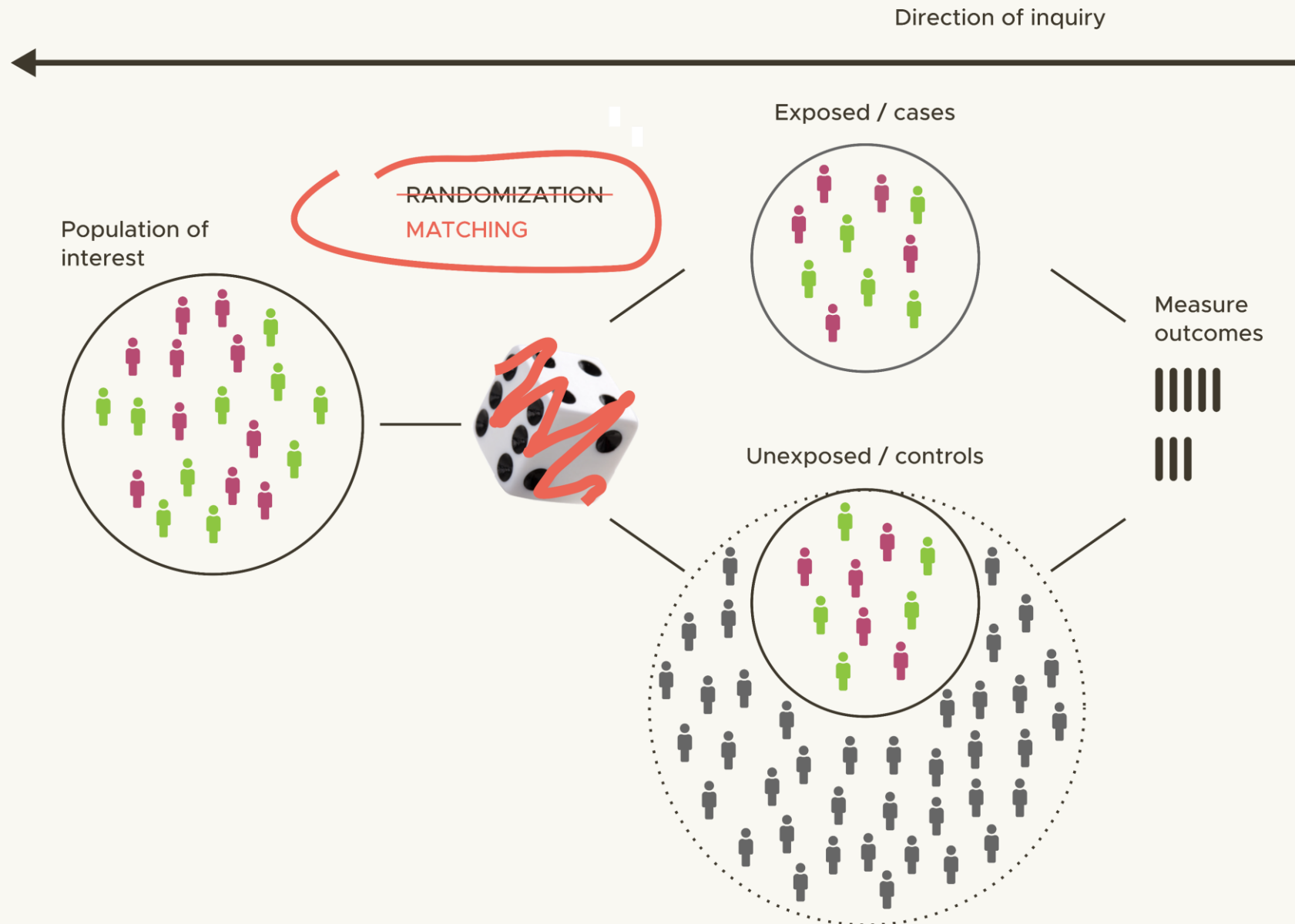
How effective is our mental health liaison service in reducing chance of admission from ED and inpatient length of stay

The gold standard

Direction of inquiry



The Retrospective Matched Cohort Design



In a randomized experiment the treated and control groups will only differ at random.

Matching attempts to replicate a randomized experiment by obtaining treated and control groups with similar distributions (or 'balance') of all known variables.

Steps in matching methods

1. Select matching variables
2. Implement a matching method
3. Assess the quality of matching
4. Compare outcomes

Selecting matching variables

Patient characteristics

gender
age
deprivation

Attendance characteristics

incident type (self-harm, RTA, etc.)
attendance type (unplanned, planned)
arrival mode ¹

Presentation characteristics

triage category
diagnosis group ¹

Prior utilisation

All prior utilisation measures were calculated separately for both previous 28 days (4 weeks) and previous 180 days (6 months). Twelve measures in total.

- count of ED attendances
- count of ED attendances ending in admission
- count of unplanned admissions
- count of planned admissions
- sum of unplanned hospital bed-days
- sum of planned hospital bed-days

Environmental factors

- time of day (day/night)
- day of week
- month of year

¹ Exact matching used.

Variable transformation

Text mining – extracting meaning from unstructured textual information

Or what you need when you're expecting

'Diagnosis code = F41.1'

But receive instead

'History of depression and under care of YPC. Self harm wounds to left wrist 1/7 ago ... GP referral for further assessment of wounds'

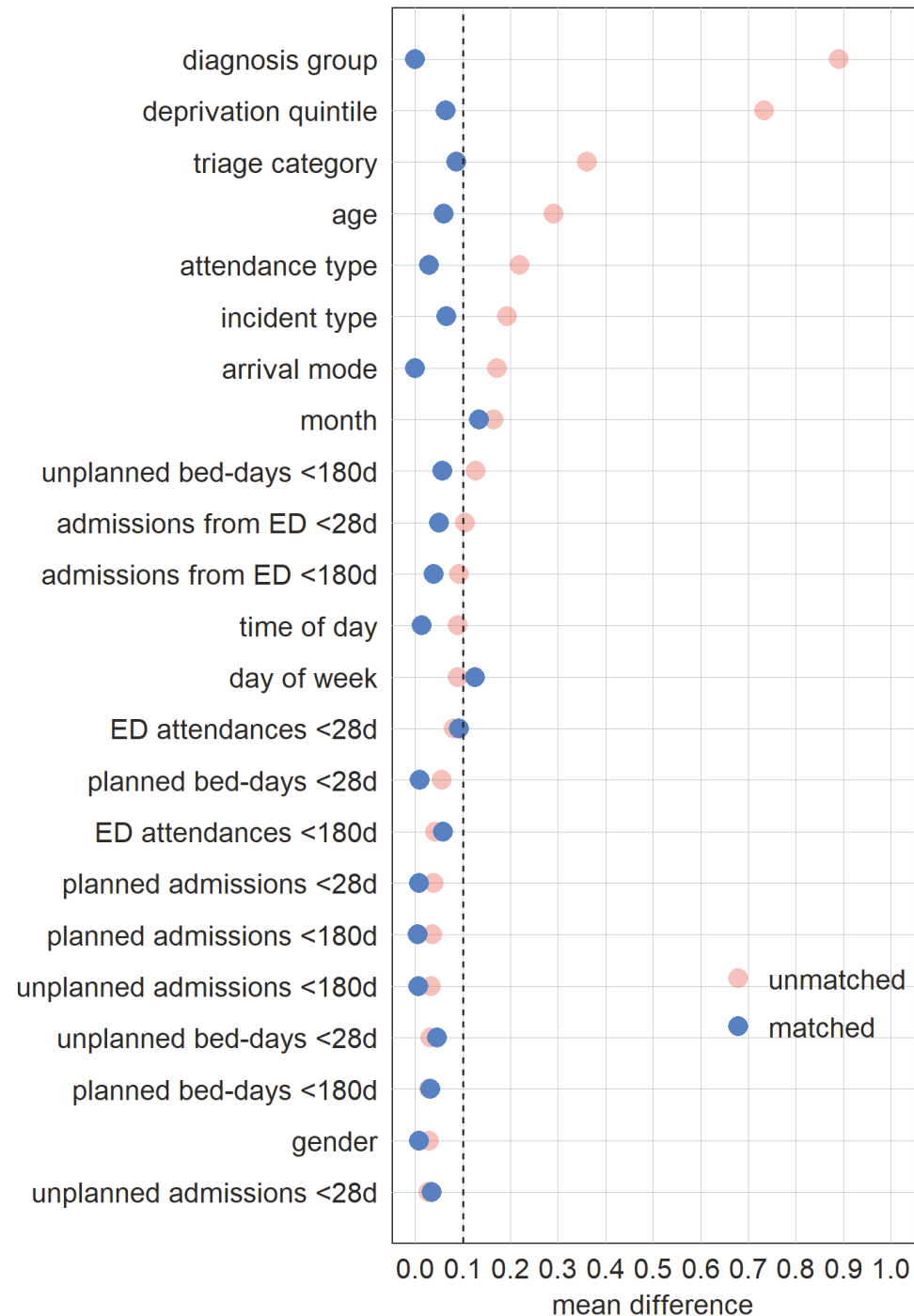


Implementing a matching method

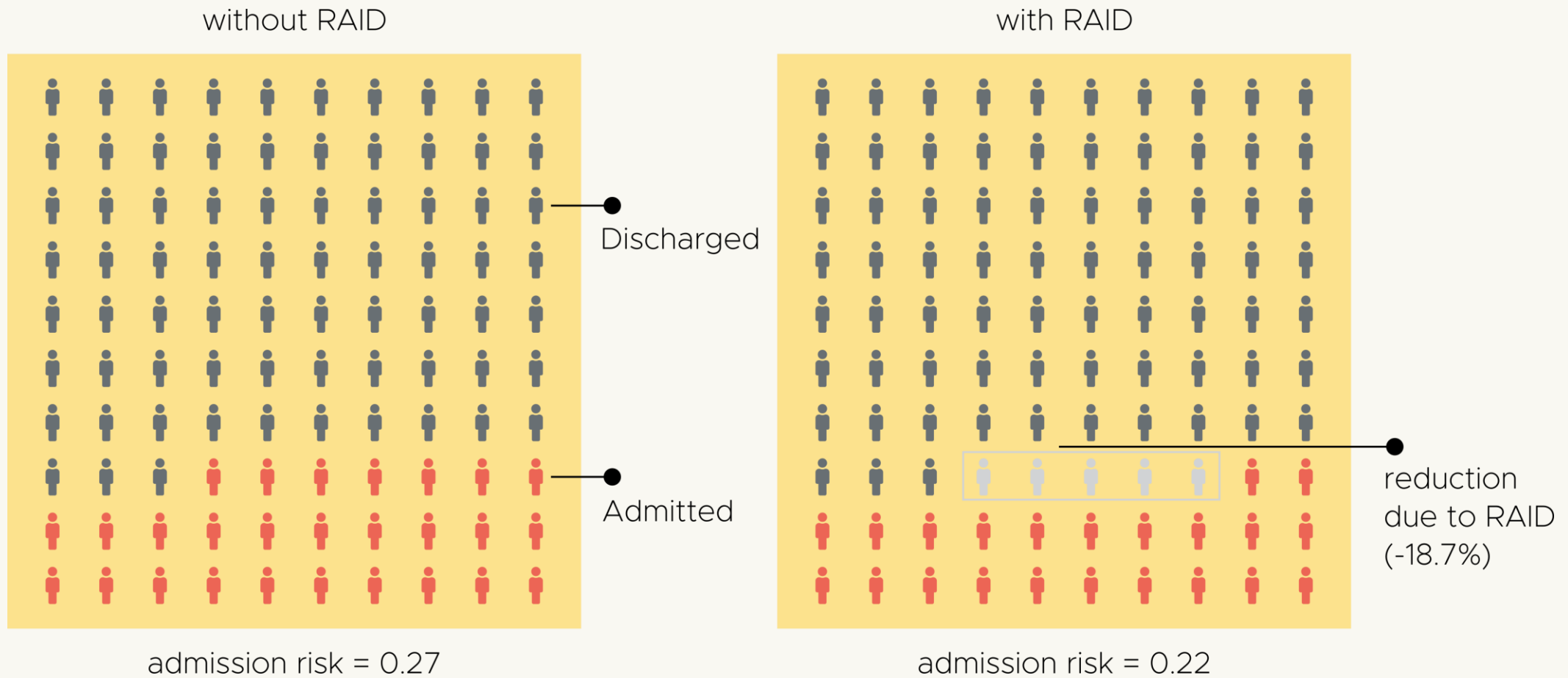
Genetic matching is a multivariate matching method that uses an evolutionary search algorithm to maximize the balance of observed covariates across matched treated and control units (Sekhon and Mebane, 1998).

Simulation studies have shown genetic matching outperforms alternative methods across a range of possible covariate distributions.

Assessing the quality of matching



Comparing outcomes



A copy of the evaluation report can be downloaded from our website

<https://bit.ly/37DEOHA>

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