Background A community respiratory service was implemented in the North West of Glasgow in January 2013, as part of the Reshaping Care for Older People Programme (RCOPP). The service comprised a team of physiotherapists, occupational therapists, and support workers to work with older COPD patients, providing education and self-management advice, and, where appropriate, treatment at home, in order to reduce the risk of hospital admission. This study aimed to measure the impact of the service on emergency admissions (EAs) to hospital due to COPD.

Methods COPD EAs were defined as emergency admissions to hospital with a primary diagnosis of COPD. Rate of COPD EAs per 1000 population aged 65 years+ in Glasgow City was compared before and after onset of the service with a 10-month phase-in period, using segmented linear regression with 21-month (April 2011-December 2012) pre- and 17-month (November 2013-March 2015) post-intervention periods. Rate of COPD EAs for residents of South and North East Glasgow (S+NE) - areas within Glasgow City, but with no such service in place - were used as a comparison group. The model adjusted for the rate of all-cause emergency admissions in order to control for the effect of other initiatives set up during the RCOPP. Autoregressive and moving average terms were included in the model, as well as a fourier term to adjust for seasonality.

Results Comparing April-July 2011 and April-July 2012, rate of COPD EAs increased in NW but remained approximately the same in S+NE. Rates reduced in both areas by 2014. By comparison, all-cause EAs rose in NW before 2013, followed by a reduction thereafter while in S+NE reductions were seen in each consecutive year. Adjusting for all cause EAs and changes in S+NE, and therefore factoring out the impact of other RCOPP initiatives, the impact of the service was found to be a level change of -0.28 (-0.32, -0.24) and a trend change of -0.02 (-0.02, -0.01) COPD EAs per 1000 person-month. This is equivalent to a predicted reduction due to the service of 0.57 COPD EAs per 1000 population per month, in March 2015, and a relative reduction of 24.7%. Rate of COPD EAs per month reduced over time after the introduction of the service (from the point of full staffing). Changes in S+NE, and therefore factoring out the impact of other RCOPP initiatives, the impact of the service was found to be a level change of -0.28 (-0.32, -0.24) and a trend change of -0.02 (-0.02, -0.01) COPD EAs per 1000 person-month. This is equivalent to a predicted reduction due to the service of 0.57 COPD EAs per 1000 population per month, in March 2015, and a relative reduction of 24.7%. Rate of COPD EAs per month reduced over time after the introduction of the service (from the point of full staffing).

Conclusion After factoring out the impact of other possible RCOPP initiatives, the community respiratory service was associated with a significant reduction in the rate of COPD EAs.