TITLE: Quantifying the net health effects of new drugs adopted by Medicare, 2015-2024

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BACKGROUND: High US prices for prescription drugs have been a significant cause for concern for patients, providers, payers, and policymakers. Unlike many other countries, payers in the United States do not use formal economic evaluation methods to support health care funding decisions, although cost-effectiveness is increasingly being used by several insurers to negotiate the prices and formulary placement of new drugs. Since 2015, the Institute for Clinical and Economic Review (ICER), an independent nonprofit organization, has evaluated the cost-effectiveness of over 160 drugs to inform coverage and pricing decisions by payers. Using the information produced by ICER, we estimate the potential health and financial consequences of adopting these drugs within Medicare, specifically exploring the associated incremental health benefits and associated costs when compared to alternative healthcare investments.

METHODOLOGY/DESIGN/APPROACH: Using publicly available information on drug appraisals, we collect information on the incremental quality adjusted life years (QALYs) and incremental costs of new drugs recommended by ICER over the period 2015-2020. Using data from Medicare Part D and Part B claims over the same period we will estimate utilization of these drugs by Medicare beneficiaries. Finally, to estimate the additional spending on these new drugs we use the estimated patient numbers multiplied by the incremental costs from the Medicare perspective.

We calculated the net health effect of each drug using the difference between the incremental QALY gains from adopting the new drug within Medicare and the estimated QALYs that could hypothetically be generated by spending the same funds on other services or treatments in Medicare. We estimated the foregone QALYs from alternative uses of drug expenditures by dividing the total additional cost of adopting new drugs by the health-opportunity cost of US health spending ($100,000 per QALY).

RESULTS: Over the period 2015-2024, we identified 53 ICER assessments of 140 drugs; 94 that were assessed for a single indication and 46 for multiple indications. Most drugs assessed were for Autoimmune & Inflammatory (34/140). Across all assessments, the median incremental QALY gain associated with these drugs was 0.76, which was highest for drugs in Neurology &

Neuromuscular therapeutic class (1.81) and lowest for drugs in Psychiatry, Pain & Substance Use (0.04). The median incremental cost effectiveness ratio was $203,718 across all drugs, and also varied by therapeutic class (60,000 in Benign Hematology & Hemoglobinopathies, $393,197 in Respiratory & Cystic Fibrosis). We are finalising the analysis that will estimate the total patients in Medicare that use these drugs, and the net health effect associated with their adoption, to be completed ahead of March.

CONCLUSION: Final estimates of Medicare use and net health effects are forthcoming, but this work will offer one of the first systematic assessments of how value-based drug evaluations translate into population-level health gains within Medicare. The findings will help clarify whether current spending on new drugs yields net health benefits or whether alternative investments could generate greater value.