Impact of Pharmacoeconomic Evaluation Guidelines: a systematic review of reporting quality of pharmacoeconomic evaluations for non-small cell lung cancer in China

Liang S[1], HAN R[1], ZHOU J[1], Miliier A[2], TOUMI M[1]
[1] Aix-Marseille University, Marseille, France; [2]Creativ-Ceutical, Paris, France;

BACKGROUND

- The Chinese guidelines for pharmacoeconomic evaluations (PE) was initially published in 2011, and updated in 2015 and in 2019, which is the most authoritative pharmacoeconomic (PE) recommendation in China, which provides a solid foundation for economic evaluations in China.
- The number of pharmacoeconomic evaluations (PE) of NSCLC treatments from China has risen rapidly, but recently the reporting quality of pharmacoeconomic publications from China has not been analyzed.
- ISPOR's Consolidated Health Economic Evaluation Reporting Standards (CHEERS) is a tool for assessing the reporting quality of PE studies [1]. It includes 24 items to check the reporting of the PE studies.

OBJECTIVE

- This study aims at identifying the impact of these guidelines on the reporting quality of the PE studies, using PE studies in non-small cell lung cancer (NSCLC) as an example.

METHOD

- PE studies published from 2003 to 2019 were systematically searched from CNKI, Wanfang and CQvip, with terms related to PE and NSCLC.
- The reporting quality of PE studies was assessed with the 24-item Consolidated Health Economic Evaluation Reporting Standards (CHEERs) checklist.
- The results of this checklist were compared, depending on the publication date (2003-2011, 2012-2015, and 2016-2019).
- Statistical method: X2 test and anova

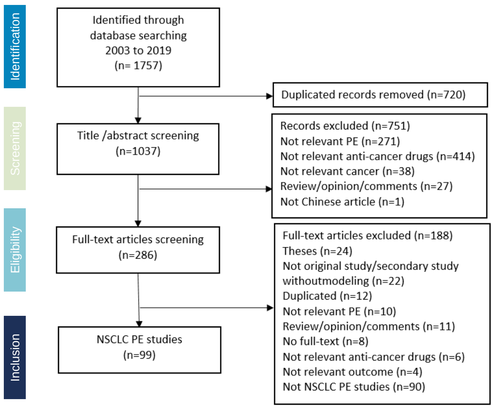
Table 1. Search strategy and inclusion criteria

Databases	CNKI (China National Knowledge Infrastructure), Wanfang, CQvip (Chongqing vip)
Search terms	In Chinese [Pharmacoeconomics, health economics, cost-effectiveness, cost-utility, cost-benefit, cost minimization analysis, and cancer]
Year of publication	2003 to 2019
Inclusion Criteria	• Population: Patients with NSCLC • Intervention: Anti-cancer drugs (except adjuvant therapies) • Comparators: Anti-cancer drugs or no treatment • Outcomes: CEA, CUA, CBA, CMA • Study designs: Primary studies, secondary studies with modeling

RESULTS

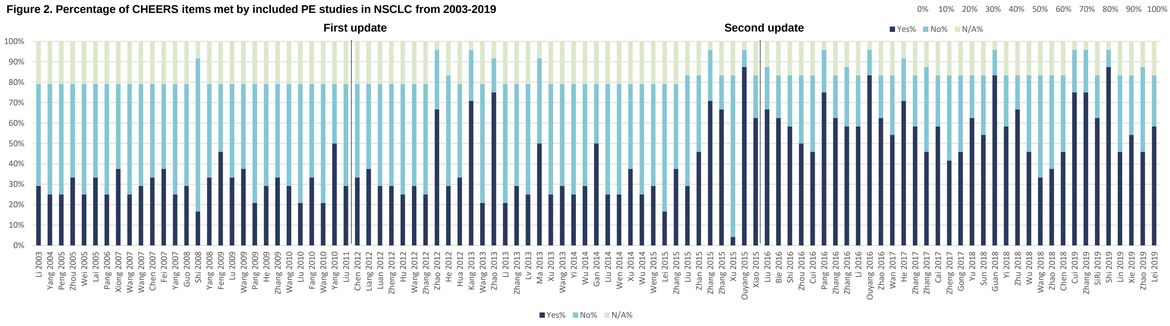
- Ninety-nine PE studies were included (Figure 1), out of which 28, 36 and 35 were published in 2003-2011, 2012-2015, and 2016-2019, respectively.

Figure 1. PRISMA flow diagram for the selection of PE studies in NSCLC



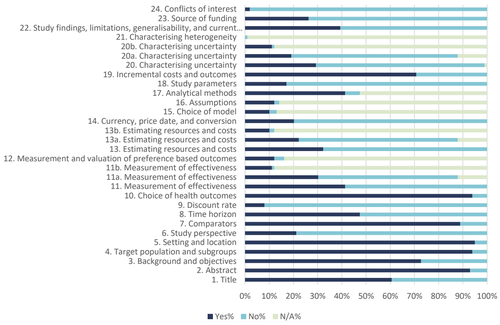
- Overall, 17% CHEERS items were not applicable and 51% of applicable items were met by the PE studies. The proportion of items non-applicable, and the proportion of applicable items reporting well in the PE studies significantly increased after each update (20%, 18%, 14%; 38%, 45%, 68%; both P<0.05) (Figure 2).

Figure 2. Percentage of CHEERS items met by included PE studies in NSCLC from 2003-2019



Items were met by 38% studies on average. The items with most and least studies reporting well were "Setting and location" (95%) and "Characterising heterogeneity" (0%) respectively (Figure 3). The reporting quality have been significantly improved in 13 and 18 items after the 1st update and after 2 updates (both P<0.05) (Figure 4, 5, 6).

Figure 3. Percentage of CHEERS items met by included PE studies in NSCLC from 2003-2019



The reporting quality have been significantly improved after the 2nd update in 14 Items (p<0.05), with 8 items having already been improved after the 1st update, including "Title", "Background and objectives", "Time horizon", "Measurement of effectiveness", "Estimating resources and costs", "Choice of model", "Study parameters", "Characterising uncertainty". (Figure 5, 6)

Figure 4. Percentage of CHEERS items met by included PE studies in NSCLC from 2003-2011

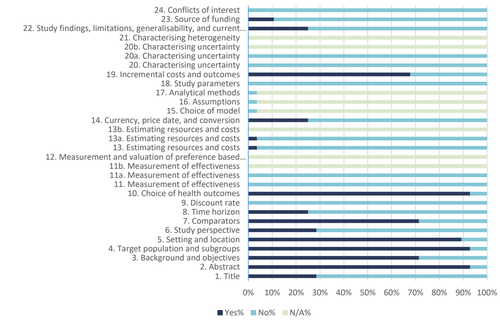


Figure 5. Percentage of CHEERS items met by included PE studies in NSCLC from 2012-2015 (First update)

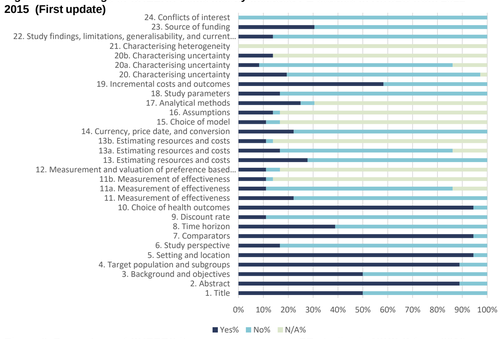
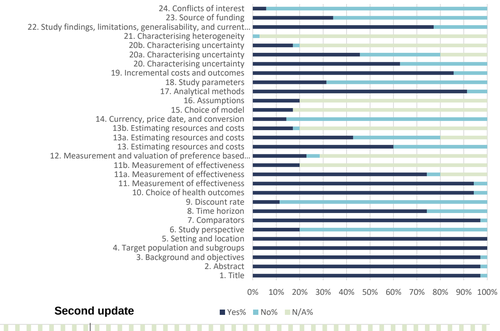


Figure 6. Percentage of CHEERS items met by included PE studies in NSCLC from 2016-2019 (Second update)



CONCLUSIONS

The PE studies published in China have improved their reporting quality since the publication of the Chinese PE guidelines, and have further improved after the update of the guidelines.

The utilization of checklists such as CHEERS before publication of economic evaluations would be way to improve the quality of reporting and make those studies more useful for decision making.

REFERENCES
1. Husereau D et al. BMJ, 2013, 16(3)

ISPOR Asia Pacific 2020, Virtual
Sep 14-16 2020. PNS 29.