

ABSTRACT

Background: WHO has set 2023 as the target for measles-rubella elimination in Southeast Asia's region. The coverage of two-dose measles-rubella immunization in the Bantul District is still below WHO standards (93.7%), while surveillance and program evaluation have never been held before. **Objective:** The study aims to conduct a measles-rubella surveillance and program evaluation following with determinant identification to identify the incidence of Measles-rubella at the individual and regional levels in the Bantul District—**methods:** program evaluation and surveillance using quantitative descriptive studies. Data collection using semi-structured questionnaires and secondary data observations in 2021-2022. Analytical sub-studies at the individual level were modeled with a case-control approach and analyzed using *chi-square* and multiple logistic regression tests. *Zero-Inflated Negative Binomial Regression (ZINB)* modeling was carried out at the regional level based on CBMS 2018-2022 data. **Results:** In the surveillance evaluation, the system was weak in networks, partnerships, and essential functions. The program evaluation found weaknesses in collecting CBMS specimens, adequate EI, and immunization, especially in collaboration with private health facilities. In the analytical sub-study, measles-rubella cases in Bantul Regency in 2018-2022 were significantly associated with no vaccine history (aOR 4.8; 95%CI 1.1-21.3) and only one dose of MRV (aOR 2.5; 95% CI 1.1-5.8) times higher become the case, respectively. In addition, the case with the far access time to PHC (aOR 2.91; 95%CI 1.12-7.54) and vitamin A supplementation six months before diagnosis (aOR 4.11; 95%CI 1.53-11.06) also the predictor of the measles-rubella case in Bantul after adjusting other variables. At the regional level, the case associated with high population density (IRR 4.5; CI 95% 1.17-17.50), The below-standard of MV first booster dose coverage (IRR 4.2; CI 95% 1.64-12.44), and a below-standard of adequate EI (IRR 3.52; CI 95% 1.20-10.28). Low coverage of surveillance and program evaluation in the region will increase Measles-rubella cases in 2021-2022 by 27-fold. **Conclusions and Suggestions:** It is necessary to strengthen networks and partnerships, including community involvement, implementation of program monitoring and evaluation, and encourage equitable immunization coverage of >95% for the successful implementation of the measles-rubella CDC program in the Bantul district. The health office is expected to maximize the involvement of private health facilities, monitoring, evaluating, and optimizing immunization coverage of at least 95%, especially in at-risk areas.

Keywords: Surveillance, Measles-Rubella Program, Bantul, *Zero-Inflated Negative Binomial Regression*.

ABSTRAK

Latar belakang: WHO telah menetapkan tahun 2023 sebagai target eliminasi campak-rubella di kawasan Asia Tenggara. Cakupan imunisasi campak-rubella dua dosis di Kabupaten Bantul masih di bawah standar WHO (93,7%), sementara itu evaluasi surveilans dan program belum pernah dilakukan sebelumnya. **Tujuan:** studi ini bertujuan untuk melakukan evaluasi surveilans dan program campak-rubella diikuti dengan identifikasi determinan untuk mengetahui faktor yang mempengaruhi kejadian campak-rubella di tingkat individu dan daerah di Kabupaten Bantul. **Metode:** evaluasi dan surveilans program menggunakan studi deskriptif kuantitatif. Pengumpulan data menggunakan kuesioner semi terstruktur dan observasi data sekunder tahun 2021-2022. Sub-studi analitik pada tingkat individu dimodelkan dengan pendekatan kasus-kontrol menggunakan *uji chi-square* dan regresi logistik berganda. Selain itu, pemodelan tingkat regional juga dilakukan dengan *Zero-Inflated Negative Binomial Regression (ZINB)* berdasarkan data CBMS 2018-2022. **Hasil:** Dalam evaluasi surveilans, sistem lemah dalam jaringan, kemitraan, dan fungsi dasar. Evaluasi program menemukan kelemahan dalam pengumpulan spesimen CBMS, PE yang memadai, imunisasi, terutama kerjasama dengan fasilitas kesehatan swasta. Pada sub studi analitik, kasus campak-rubella di Kabupaten Bantul pada tahun 2018-2022 secara signifikan dikaitkan dengan tidak adanya riwayat vaksin (aOR 4,8; 95% CI 1,1-21,3) dan hanya satu dosis MRV (aOR 2,5; 95% CI 1,1-5,8) kali lebih tinggi menjadi kasus, masing-masing. Selain itu, kasus dengan waktu akses puskesmas yang jauh (aOR 2,91; 95% CI 1,12-7,54) dan suplementasi vitamin A enam bulan sebelum diagnosis (aOR 4,11; 95% CI 1,53-11,06) juga menjadi prediktor kasus campak-rubella di Bantul setelah disesuaikan variabel lain. Di tingkat regional, kasus dipengaruhi oleh kepadatan penduduk yang tinggi (IRR 4,5; CI 95% 1,17-17,50), Cakupan imunisasi campak-rubella dosis booster pertama (IRR 4,2; CI 95% 1,64-12,44), dan PE adekuat di bawah standar (IRR 3,52; CI 95% 1,20-10,28). Cakupan evaluasi, pengawasan, dan program yang rendah di wilayah tersebut akan meningkatkan kasus Campak-rubella pada 2021-2022 sebesar 27 kali lipat. **Kesimpulan dan Saran:** Diperlukan penguatan jejaring dan kemitraan, termasuk keterlibatan masyarakat, pelaksanaan monitoring dan evaluasi program, serta mendorong cakupan imunisasi berkeadilan sebesar >95% untuk keberhasilan pelaksanaan program CDC campak-rubella di Kabupaten Bantul. Dinas kesehatan diharapkan dapat memaksimalkan keterlibatan fasilitas kesehatan swasta, pemantauan, evaluasi, dan optimalisasi cakupan imunisasi minimal 95%, terutama di daerah berisiko.

Kata kunci: Surveilans, Program Campak-Rubella, Bantul, *Zero-Inflated Negative Binomial Regression*.