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# Health Science Journal of Indonesia

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## Editorial

**Construction of Plasmids Expressing Recombinant B cell epitopes of PD1**

**Laboratory-based Acute Flaccid Paralysis surveillance pre-polio free certification**

**Characteristics of Acute Transfusion Reactions and its related factors**

**Screening of *Legionella pneumophila* from water sources**

**Evaluation of claim submission and returning for BPJS inpatient services**

**Correlation of nutritional status with academic achievement**

**The evaluation of Nusantara Sehat program**

**Residential area, hygiene behaviour, and pre-cervical lesions of women aged 25-64 years**

**How to control the sexually transmitted diseases in Benjina?**

**Policy options to integrate HIV services into Social Health Insurance (JKN)**



Health Science Journal of Indonesia



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## Editorial Note

Cancer is the second leading cause of death in Indonesia.<sup>1</sup> Technology in the effort of cancer prevention is continuously being developed. Alternate treatment of immunotherapy through laboratory examination is under-consideration and need further exploration.<sup>2</sup> Creating monoclonal antibody and detecting system is prospective to be expanded through sequencing examination. Furthermore, biotechnology and laboratory based surveillance of Acute Flaccid Paralysis had successfully acknowledge Indonesia as a free Polio Myelitis country in 2014.<sup>2</sup> Nonetheless, monitoring of Polio virus circulation still be needed in order to achieve the Global Polio's eradication target.

The technology of cancer treatment seems in racing with the evidence of cancer and other transmitted diseases. A study found there is a relationship between living in an industrial environment with positive pap-smears or VIA (visual inspection of cervix with acetic acid method) of cervical cancer at women aged 25-64 years.<sup>3</sup> Disregard to the living area, massive industry development impacted in the evidence of prostitution due to sexual needs and economic demands of sex workers. A qualitative study found prostitution in un-localized area is more difficult to control and is potentially increases the risk of HIV-AIDS incidence.

Other communicable diseases which need to be taken care is related to nosocomial infection. *Legionella pneumophila* contributes to the occurrence of Community Acquired Pneumonia (CAP) and Health Care Associated Pneumonia. Nosocomial threat as an unexpected infection could occur in hospitalized patients.<sup>4</sup> Study in two private hospital in Jakarta showed some growth of this bacterial colonies with morphology catalase and oxidase characteristics. Unfortunately, confirmatory test using latex agglutination was unable to identify such colony. So that a more sensitive and specific approach instead of latex agglutination need to implement in the upcoming investigation.

While the communicable and non-communicable diseases remained evidence, the nutrition related problems keep burdensome. In human life, nutrition became the major component related to quality of human resources; i.e. proper physical growth and cognitive development. Malnutrition either under or over-nutrition has a similar impact towards academic achievements.<sup>5</sup> Study in school children showed overweight is significantly at risk of lower pupil's academic achievement.

The social health insurance in Indonesia has implemented since 2014. Along with the implementation many constraints have occurred such as incomplete and or late claim submission by hospital brings about delayed for the reimbursement by the BPJS. Mismatch of disease code as well as incomplete medical resume were two among other problems related claim which may lead to quality of care and highly BPJS' deficit overtime.<sup>6</sup> In addition to social health insurance, model development and scenarios on the projection of cost and utilization of various HIV program activities and its consequences has been developed.<sup>7</sup> The scenarios show that provision of HIV services within the basic benefits package of JKN would require a reasonable cost per member per month, depending on the comprehensiveness of the benefit. A clear roadmap should be developed to ensure all services provided are affordable and in good quality.

Finally, Indonesia as a big archipelago lays its geographical landscape over the sea and mountainous range. With its divers condition the government is almost never without public health problems in delivering the health services for its community especially with regard to professional health workforce. According to WHO the more health workforce available in an area, the wider chance to access the health services in the region.<sup>8</sup> In filling of the health services gaps *Nusantara Sehat* is developed. It is teams of fresh graduate health profession that design to increase health services delivery to the community especially those living in the remote, country's boundary and isles areas. The assignment of the *Nusantara Sehat* Team at health centers has brought improvement of public health index.

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# Health Science Journal of Indonesia

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WH 200

Sofy Meilany, Andrijono, Pauline Phoebe Halim,  
Budiman Bela

## **Construction of Plasmids Expressing Recombinant B cell epitopes of PD1**

Health Science Journal of Indonesia 2019;10;1-7

**Latar Belakang:** Pengobatan kanker di Indonesia umumnya menggunakan pengobatan dengan kemoterapi atau dengan operasi. Efek samping dari pengobatan ini antara lain adalah kerontokan rambut, mual dan penurunan berat badan. Saat ini sedang berkembang alternatif terapi kanker dengan menggunakan imunoterapi. Kemampuan sel kanker untuk menghindari dari sistem imun disebabkan adanya protein PD-1 pada sel T yang berikatan dengan ligannya PD-L1.

**Metode:** Penelitian ini merupakan penelitian awal yaitu pembuatan rekombinan PQE PD-1 dan menggunakan bagian soluble dari PD-1 yang disebut dengan EP2PD1 yang akan digunakan untuk pembuatan antibodi monoklonal dan sistem pendeteksi antibodi monoklonal. Metode pembuatan rekombinan PD-1 dan EP2PD1 dengan cara penentuan sekuens epitop sel B yang paling imunogenik dilanjutkan dengan amplifikasi sekuens tersebut dengan PCR dan diligasi ke vektor pengeksresi PQE80.

**Hasil:** Telah terbentuk konstruksi rekombinan PQE80 PD-1 dan PQEEP2PD1 yang diverifikasi menggunakan PCR koloni, pemotongan enzimatik dan sekuensing. Hasil penelitian menunjukkan bahwa epitop PD1 telah terklona ke PQE 80 dan tidak ditemukan mutasi dalam urutan asam amino.

**Kesimpulan:** Konstruksi yang dibuat tidak mempunyai mutasi dan dapat dilanjutkan untuk pembuatan antibodi monoklonal.

**Kata Kunci:** PD1. Epitop, Kanker, Immunotherapy

WC 555

Nike Susanti, Herna

## **Laboratory-based Acute Flaccid Paralysis surveillance pre-polio free certification: Indonesia experience, 2003-2013**

Health Science Journal of Indonesia 2019;10;8-14

**Latar belakang:** Virus Polio Liar dapat menyebabkan kelumpuhan dan dapat dicegah dengan imunisasi. Untuk memonitor transmisi virus polio liar dilakukan surveilans Acute Flaccid Paralysis (AFP) dan investigasi laboratorium yang telah dimulai sejak tahun 1995 di Indonesia. Virus polio liar Indigenous terakhir ditemukan di Indonesia tahun 1995. Indonesia masih memiliki ancaman importasi virus polio liar dari negara endemis dan mutasi virus polio dari vaksin yang menyebabkan kelumpuhan yang sama seperti virus polio liar. Artikel ini bertujuan untuk memberikan gambaran mengenai surveilans AFP berbasis laboratorium di Indonesia pada tahun 2003-2013 sehingga mengantarkan Indonesia sebagai negara bebas polio pada tahun 2014.

**Metode:** Data yang dianalisis adalah data kasus AFP seluruh Indonesia periode tahun 2003-2013. Data didapat dari laboratorium jejaring laboratorium Polio di Jakarta, Bandung, Surabaya dan Sub Direktorat Surveilans, Direktorat Surveilans dan Karantina Kesehatan, Direktorat Jenderal Pencegahan dan Pengendalian Penyakit. Data di analisis menggunakan program Microsoft Excel.

**Hasil:** Sebanyak 305 kasus AFP yang disebabkan oleh infeksi virus polio liar tipe 1 impor ditemukan pada tahun 2005 dan 2006. Terdapat 39 kasus AFP yang disebabkan cVDPV tipe 1 ditemukan di Pulau Madura pada tahun 2005. Virus polio liar tipe 1 hanya ditemukan di pulau Sumatera dan Jawa. Penyebaran Virus polio berhasil dihentikan pada tahun 2006 dan sudah tidak ditemukan lagi hingga tahun 2013.

**Kesimpulan:** Surveilans AFP berbasis laboratorium yang baik berhasil memantau dan mendeteksi sirkulasi virus polio. Peningkatan kinerja surveillance

AFP diperlukan untuk membuktikan terhentinya transmisi virus polio sehingga eradikasi polio secara global dapat diraih

**Kata kunci:** surveilans, laboratorium polio, Acute Flaccid Paralysis

WB 356

Pustika Amalia Wahidiat, Elida Marpaung, Stephen Diah Iskandar

### **Characteristics of Acute Transfusion Reactions and its related factors in Cipto Mangunkusumo Hospital Jakarta, Indonesia**

Health Science Journal of Indonesia 2019;10;15-20

**Latar belakang:** Reaksi transfusi akut (RTA) merupakan sekelompok kejadian yang tidak diinginkan akibat pemberian transfusi darah. Manifestasi dari RTA bervariasi dari yang ringan hingga mengancam nyawa. Saat ini, data mengenai reaksi transfusi di Indonesia masih sangat terbatas. Dalam studi ini, kami bertujuan untuk memberikan gambaran mengenai karakteristik RTA dan faktor-faktor yang mempengaruhinya.

**Metode:** Studi ini merupakan studi retrospektif yang melibatkan 288 subyek dengan RTA. Studi dilakukan di Rumah Sakit Dr. Cipto Mangunkusumo, dimulai sejak Januari hingga Desember 2017. RTA dikelompokkan berdasarkan sistem tubuh yang mengalami manifestasi, serta derajat manifestasinya.

**Hasil:** Sel darah merah merupakan produk darah utama yang ditransfusikan ke subyek, diikuti dengan konsentrat trombosit, plasma segar beku, dan kriopresipitat. Lima gejala utama dari RTA adalah gatal, demam/kenaikan suhu tubuh, menggigil, urtikaria, dan angioedema. Berdasarkan sistem tubuh yang terkena, umumnya RTA bermanifestasi sebagai gejala pada kulit (56.6%). Berdasarkan derajat manifestasinya, RTA umumnya dikategorikan dalam derajat ringan (55.9%). Anak-anak cenderung mengalami manifestasi yang ringan (64.8%) dan utamanya bermanifestasi pada kulit (65.4%). Riwayat transfusi mempengaruhi derajat RTA secara signifikan. RTA derajat sedang dan gejala konstitusional lebih banyak ditemukan pada subyek yang mendapat PRC dibanding produk darah lainnya.

**Kesimpulan:** Umumnya RTA bermanifestasi sebagai gejala dermatologi. Hanya sedikit kasus

RTA yang disebabkan oleh reaksi inkompatibilitas. Manifestasi dan derajat RTA juga dipengaruhi oleh umur, riwayat transfusi, dan jenis komponen darah.

**Kata kunci:** transfusi darah, reaksi transfusi akut, riwayat transfuse, usia

WC 202

Lucky H. Moehario, T. Robertus, Yuliana Grace, Enty Tjoe

### **Screening of *Legionella pneumophila* from water sources in the hospitals in Jakarta**

Health Science Journal of Indonesia 2019;10;21-6

**Latar belakang:** Pneumonia akibat bakteri *Legionella* masih menjadi masalah di berbagai tempat di dunia; menjadi penyebab 2-15 % dari pneumonia yang perlu di rawat di Rumah Sakit. Kasus legionellosis di Indonesia dilaporkan terjadi di Bali pada tahun 1996 dan di Tangerang tahun 1999. Keberadaan *Legionella* di fasilitas Pelayanan Kesehatan berpotensi sebagai penyebab infeksi nosokomial. Bakteri *Legionella* hidup di lingkungan perairan hangat dan lembab, juga ditemukan diberbagai sumber air seperti, sumber air sistem pendingin ruangan, kolam renang, tempat penampungan air di rumah sakit, perkantoran, hotel, dan perumahan sehingga turut berkontribusi dalam terjadinya community acquired dan pneumonia nosokomial.

**Metode:** Penelitian ini merupakan penelitian deskriptif yang bertujuan untuk penapisan keberadaan *Legionella pneumophila* diberbagai sumber dan penampungan air di Rumah Sakit (RS) di Jakarta dengan menggunakan medium *Legionella Charcoal Yeast Extract* (CYE) dan dengan berbagai suplemen. Tujuh belas sampel air yang berasal dari berbagai sumber air di dua RS yang berlokasi di Jakarta Utara dan Barat telah diteliti.

**Hasil:** Dua puluh satu koloni yang ditemukan memiliki karakteristik *L. pneumophila* dari semua varian medium, namun pada tes agglutinasi latex tidak memberikan reaksi positif.

**Kesimpulan:** *L. pneumophila* tidak ditemukan diberbagai sumber air dari dua RS ini. Penggunaan metode yang lebih sensitif dan spesifik perlu dilakukan untuk memastikan ditemukannya *L. pneumophila*.

**Kata kunci:** Legionellosis, *Legionella pneumophila*, medium BCYE

W 100

Cicih Opitasaki, Nurhayati

### **Evaluation of claim submission and returning for BPJS inpatient services: a case study of hospital X in 2017**

Health Science Journal of Indonesia 2019;10;27-31

**Latar belakang:** Keterlambatan dan ketidaklengkapan pengajuan klaim menyebabkan keterlambatan pembayaran klaim yang akan berdampak pada arus kas rumah sakit (RS). Artikel ini bertujuan untuk menilai pengajuan dan pengembalian klaim pada pelayanan rawat inap pasien BPJS.

**Metode:** Penelitian potong lintang dengan desain studi kasus. Sumber data menggunakan data pengajuan dan pengembalian klaim rawat inap pasien BPJS periode Januari-Juni 2017. Data dianalisis secara deskriptif.

**Hasil:** frekuensi pengajuan klaim rawat inap terbanyak 17 kali dan terendah 13 kali dalam sebulan, yang berarti RS mengajukan klaim ke BPJS hampir setiap 2-3 hari sekali. Dari 11,945 berkas klaim, sebanyak 3,013 (25,2%) berkas klaim dikembalikan ke RS oleh BPJS. Nilai klaim yang diajukan untuk 11,945 berkas adalah Rp. 146,967,494,700, sedangkan nilai klaim dari berkas yang dikembalikan sebesar Rp. 45,150,888,100-. Alasan berkas dikembalikn antara lain masalah administrasi, ketidaklengkapan resume medis, pemeriksaan penunjang, konfirmasi koding, tidak layak, pinjam status, dan TXT yang tidak terbaca. Penyebab paling banyak berkas dikembalikan adalah konfirmasi koding (42,4%) dan ketidaklengkapan resume medis (30,3%).

**Kesimpulan:** tampaknya RS tidak pernah mengalami keterlambatan dalam pengajuan klaim, namun berkas klaim yang dikembalikan BPJS masih banyak, yang utamanya disebabkan oleh permasalahan koding dan ketidaklengkapan resume medis.

**Kata kunci:** penilaian, klaim, pengajuan, pengembalian.

WS 130

Muhammad Hidayat Sahid

### **Correlation of overweight and academic achievement at grade 1-3 pupil at school of highscole Indonesia 2018**

Health Science Journal of Indonesia 2019;10;32-40

**Latar belakang:** Berdasarkan data WHO pada tahun 2011 menunjukkan 1 dari 10 anak di dunia mengalami obesitas (WHO, 2011). Data status gizi pada anak usia 5-12 tahun di DKI Jakarta menunjukkan underweight 14,0% dan overweight 6,8%. Data secara spesifik untuk wilayah Jakarta Selatan adalah underweight 7,4% dan overweight 7,3%. Permasalahan gizi merupakan salah satu faktor penting yang berpengaruh terhadap prestasi akademik siswa. Tujuan dari penelitian: mengetahui pengaruh status gizi terhadap prestasi akademik siswa kelas 1-3 sekolah dasar.

**Metode:** desain yang digunakan adalah cohort restrospective dengan melihat hubungan antara hasil School Wide Assessment (SWA) dengan status gizi anak pada 9 bulan sebelumnya. Populasi dalam penelitian ini adalah siswa kelas 1-3 sekolah dasar di Sekolah HighScope Indonesia dengan total sampling yaitu berjumlah 480 anak.

**Hasil:** Hasil penelitian ini menunjukkan bahwa terdapat hubungan signifikan antara variabel status gizi terhadap prestasi akademik 6:29 RR (95% CI 3,82-10,35). Dalam analisis regresi cox menunjukkan status gizi yang baik memiliki RR pada 3,17 (95% CI 2,404 hingga 4,204) dan signifikan pada nilai p-value 0,000. Artinya, siswa yang memiliki kelebihan berat badan memiliki risiko kinerja akademik yang buruk. Sedangkan variabel lainnya menunjukkan bahwa tidak ada hubungan yang signifikan dengan risiko memiliki kinerja akademik yang buruk. Pada model akhir analisis regresi cox pada variabel status gizi pada prestasi juga menunjukkan nilai RR sebesar 3,09 (95% CI 2,365 hingga 4,053) p-value 0,000.

**Kesimpulan:** Anak-anak dengan kelebihan berat badan berisiko untuk memiliki prestasi akademik yang buruk sebesar 6.3 kali.

**Kata kunci:** Status gizi; prestasi belajar; faktor risiko; *cohort retrospective*



WA 540

Ida Diana Sari, Harimat Hendarwan, Rizqiana Halim

### **The evaluation of Nusantara Sehat program using Nusantara Sehat Public Health Index**

Health Science Journal of Indonesia 2019;10;41-50

**Latar Belakang:** Faktor geografi Indonesia yang berupa daratan, lautan, pegunungan, dan pulau-pulau yang tersebar menyebabkan distribusi tenaga kesehatan dan akses pelayanan kesehatan yang tidak optimal. Berdasarkan Peraturan menteri kesehatan yang telah ditetapkan, pemerintah berupaya mendayagunakan secara khusus sumber daya manusia kesehatan dalam kurun waktu tertentu dengan jumlah dan jenis tertentu, agar meningkatkan akses dan mutu pelayanan kesehatan pada fasilitas pelayanan kesehatan khususnya di wilayah Daerah Tertinggal, Perbatasan, dan Kepulauan (DTPK) dan Daerah Bermasalah Kesehatan (DBK) melalui Program Nusantara Sehat (NS).

**Metode:** Tahun 2015 telah ditugaskan Tim NS Batch 1 dan 2 pada 120 Puskesmas di DTPK dan DBK selama 2 tahun. Kemudian pada tahun 2017 setelah masa tugas berakhir, diadakan evaluasi program yang bertujuan untuk mengetahui dampak program NS terhadap indeks kesehatan masyarakat dengan menggunakan desain Pre and Post-Test Intervention with Control. Evaluasi dilakukan di 15 provinsi, 27 kabupaten, dan 60 Puskesmas pada bulan Februari - Desember 2017.

**Hasil:** Hasil evaluasi program menunjukkan bahwa pada tahun 2017 terjadi perubahan rata-rata indeks kesehatan masyarakat dibandingkan dengan tahun 2015, baik pada Puskesmas intervensi maupun kontrol ( $p=0,000$ ). Kemudian hasil uji independen t-test terhadap delta perubahan indeks menunjukkan bahwa peningkatan indeks kesehatan masyarakat pada Puskesmas intervensi lebih besar dibandingkan dengan Puskesmas kontrol ( $p=0,046$ ).

**Kesimpulan:** penugasan Tim NS pada Puskesmas telah membawa perbaikan indeks kesehatan masyarakat yang lebih baik. Diperlukan pengamatan lebih jauh terkait sustainabilitas Program NS dan analisis biaya manfaat (cost benefit analysis) terhadap Program NS.

**Kata Kunci:** Evaluasi program, Nusantara Sehat, Indeks Kesehatan Masyarakat, Indonesia.

WP 480

Puti Sari Hidayangsih

### **Residential area, hygiene behaviour, and pre-cervical lesions of women aged 25-64 years in Indonesia**

Health Science Journal of Indonesia 2019;10;51-7

**Latar belakang:** Kanker serviks merupakan penyakit kanker dengan prevalensi tertinggi di Indonesia. Penelitian ini bertujuan untuk mengidentifikasi hubungan antara wilayah tempat tinggal, perilaku kebersihan diri, dan lesi prakanker serviks pada wanita pernah kawin umur 25-64 tahun di Indonesia.

**Metode:** Studi ini menggunakan data Riset Penyakit Tidak Menular tahun 2016 di daerah perkotaan di 34 provinsi Indonesia. Populasi dan sampel adalah wanita pernah kawin berusia 25-64 tahun yang diwawancarai dan dilakukan pengambilan apus serviks menggunakan metode Inspeksi Visual Asetat (IVA) untuk mengetahui indikasi prevalensi lesi prakanker serviks. Analisis hubungan menggunakan regresi logistik dengan metode enter, dengan total sampel yang dianalisis 37.456 responden.

**Hasil:** Hasil analisis menemukan proporsi 7% wanita dengan hasil tes IVA positif. Wanita yang tinggal di sekitar lokasi industri berisiko 1,2 kali (Adjusted OR= 1,2; 95% CI= 1,1-1,4) positif terhadap hasil periksa IVA daripada mereka yang tidak tinggal di wilayah tersebut. Sedangkan perilaku hygiene perorangan seperti membersihkan alat kelamin setelah selesai berhubungan seksual tidak bermakna secara signifikan terhadap hasil IVA positif.

**Kesimpulan:** Ada hubungan antara tinggal di lingkungan industri dengan hasil IVA positif pada wanita usia 25-64 tahun menunjukkan pentingnya penapisan dini secara teratur pada wanita terutama yang tinggal daerah industri.

**Kata kunci:** Lesi prakanker, serviks, IVA, lingkungan, industri

QZ 204

Santi Dwiningsih<sup>1</sup>, Agung Dwi Laksono<sup>2</sup>**Indonesia's readiness to implement the HPV vaccine mandatory for school age**

Health Science Journal of Indonesia 2019;10;58-66

**Latar Belakang:** Prostitusi yang muncul bersamaan dengan industri besar menimbulkan masalah kesehatan, masalah sosial ekonomi, dan budaya. Artikel ini dimaksudkan untuk mengeksplorasi faktor-faktor yang berkaitan dengan praktik prostitusi di Benjina dan mengeksplorasi potensi untuk mengendalikan dampak penyakit penularan melalui hubungan seks.

**Metode:** Penelitian kualitatif ini dilakukan dengan pendekatan etnografi. Wawancara mendalam dan observasi partisipatif dilakukan terhadap 30 informan yang terkait langsung dengan praktik prostitusi di Benjina.

**Hasil:** Tidak ditemukan lokalisasi di Benjina. Praktik pelacuran ditemukan sebagai hal yang biasa di tempat yang disebut rumah karaoke yang menyediakan peralatan menyanyi sederhana, minuman keras, dan layanan seksual. Ada 46 pekerja seks perempuan yang bekerja di 12 rumah karaoke. Faktor ekonomi ditemukan sebagai faktor dominan yang mendorong para pelaku pelacuran, di samping balas dendam. Ada beberapa kendala dalam menggunakan kondom dalam praktik pelacuran ini. Di antara mereka adalah bentuk fisiologi penis yang mengalami modifikasi, dan hubungan pekerja seks khusus dengan kekasih mereka. Ada potensi *Sasi* yang dapat digunakan sebagai upaya untuk mengendalikan penyakit penularan melalui hubungan seks.

**Kesimpulan:** *Sasi* sebagai hukum adat berpotensi menjadi hukum positif untuk menerapkan kondomisasi secara keseluruhan di Benjina.

**Kata kunci:** Penyakit menular seksual, pelacuran, hukum adat, *Sasi*, adat istiadat.

W 100

Mardiati Nadjib, Purwa Kurnia Sucahya, Mondastri Korib, Ratih Oktarina, Pujiyanto, Amila Megraini, Hendri Hartati, Pandu Harimurti

**Policy options to integrate HIV services into Social Health Insurance (JKN) in Indonesia**

Health Science Journal of Indonesia 2019;10;67-76

**Latar Belakang:** Setelah sekian tahun bergantung pada sumber pendanaan luar negeri, pembiayaan Program HIV/AIDS di Indonesia diharapkan menggunakan sumber pendanaan dalam negeri. Skema Jaminan Kesehatan Semesta atau Jaminan Kesehatan Nasional (JKN) yang dimulai tahun 2014 menanggung pengobatan termasuk infeksi oportunistik. Pertanyaan penelitian apakah paket manfaatnya dapat mencakup intervensi kesehatan masyarakat seperti HIV tanpa menghambat penyediaan pelayanan? Implementasi untuk Program HIV yang selama ini disubsidi Pemerintah memerlukan kehati-hatian. Studi ini bertujuan untuk menganalisis skenario terkait biaya dan utilisasi pada pelayanan HIV guna mendukung kebijakan yang potensial untuk mengintegrasikan intervensi HIV ke dalam paket manfaat JKN.

**Metode:** Penelitian ini menganalisis paket manfaat dan mekanisme pembiayaan terkait pelayanan HIV, keanggotaan JKN, target populasi kunci, serta estimasi premi untuk pelayanan HIV hingga tahun 2019. Studi observasional ini menghasilkan data biaya dan utilisasi dari tingkat nasional dan daerah sebagai data dasar. Peneliti membangun model dan menganalisis skenario proyeksi biaya dan utilisasi dari beragam program aktivitas HIV serta konsekuensinya.

**Hasil:** Skenario dikembangkan berdasarkan kelengkapan paket manfaat dan komponen mana yang bisa dijamin dalam JKN. Pelayanan yang terkait HIV saat ini sebagian besar dijamin oleh pemerintah mulai dari Konseling dan Tes HIV Sukarela (KTS) hingga pengobatan Infeksi Oportunistik. Pengobatan dan perawatan kemungkinan dapat dijamin oleh JKN, dengan bantuan pemerintah untuk pencegahan dan pelayanan ART.

**Kesimpulan:** Skenario dengan paket manfaat dasar akan membutuhkan biaya medis yang rasional per pasien per bulan, tergantung pada kelengkapan paket manfaat. Sebuah peta jalan yang jelas perlu disusun untuk memastikan seluruh pelayanan terjangkau dan berkualitas baik.

**Kata Kunci:** Jaminan kesehatan semesta, pelayanan HIV, dan Opsi Kebijakan

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WH 200

Sofy Meilany, Andrijono, Pauline Phoebe Halim, Budiman Bela

## Construction of Plasmids Expressing Recombinant B cell epitopes of PD1

Health Science Journal of Indonesia 2019;10;1-7

**Background:** Medications on cancer to date in Indonesia is mostly by surgical or chemotherapy, this type of medications is not always curing the patients. The side effect of the chemotherapy drugs sometimes more challenging such as hair loss, nausea and lost weight. One of the promising targets for cancer is using immune therapy. Cancer cells can avoid immune response by surprising immunity through activation of specific inhibitory signalling pathways, referred to as immune checkpoints. Immune checkpoints like PD-1, PD-L1 are breakthrough therapies in oncology and this monoclonal antibody have been approved by the FDA for treatment. In this research we develop full PD-1 and part of PD1 sequence as an insert then we construct with plasmid PQE80L. This recombinant called PQE PD-1 and PQEEP2PD1. The aim of this study is to make recombinant which would be used to detect PD1 full clone monoclonal antibodies.

**Methods:** In this study, we designed our recombinants using Indonesian HLA and others using in silico models, this prototype will not only cover Indonesian patients but also other country.

**Result:** The result showed that the epitope sequence of PD1 has been clone to PQE 80 wt and verified using colony PCR, Enzyme Digestion and Sanger Sequencing. The Clone than will be expressed and injected to animal model to produce antibody.

**Conclusion:** Construction of recombinant PQE PD-1 and PQE EP2PD1 are constructed without any mutation in the sequence, this recombinant can be used in the next study for protein

**Keywords:** PD1. Epitope, Cancer, Immunotherapy

WC 555

Nike Susanti, Herna

## Laboratory-based Acute Flaccid Paralysis surveillance pre-polio free certification: Indonesia experience, 2003-2013

Health Science Journal of Indonesia 2019;10;8-14

**Background:** Wild Poliovirus can cause flaccid paralysis and can be prevented by immunization. To monitor wild polio virus transmission, Acute Flaccid Paralysis (AFP) surveillance and laboratory investigations was initiated in 1995 in Indonesia. The last indigenous wild poliovirus found at 1995 in Indonesia. Indonesia still has the threat of imported wild polio viruses from endemic countries and poliovirus mutation from vaccine that can cause paralytic as well as wild poliovirus. The aim of this article is to describe the laboratory-based AFP surveillance in Indonesia from 2003-2013 so that it had led the Indonesia certified for polio free in 2014.

**Method:** Data analysis performed on AFP cases data from all provinces in Indonesia period of 2013-2014. Data were collected from polio laboratories network in Jakarta, Bandung, Surabaya and the Sub Directorate of Surveillance, Directorate of Surveillance and Health Quarantine, Directorate General of Disease Prevention and Control. Data were analyzed using Microsoft Excel program.

**Result:** 305 paralysis cases were caused by imported type 1 wild poliovirus infection were found in 2005 and 2006. 39 paralysis cases caused by type 1 cVDPV infection were also found on Madura Island in 2005. Type 1 wild polioviruses only found on the Sumatra and Java island. The wild poliovirus transmission was stopped in 2006 and was no longer found until 2013.

**Conclusion:** Good laboratory-based AFP surveillance has been successfully monitoring and detecting the circulation of the poliovirus. Improved AFP surveillance performance is needed to prove cessation of poliovirus transmission so that eradication of poliovirus can be achieved globally.

**Keywords:** Surveillance, polio laboratory, Acute Flaccid Paralysis

WB 356

Pustika Amalia Wahidiat, Elida Marpaung,  
Stephen Diah Iskandar

### **Characteristics of Acute Transfusion Reactions and its related factors in Cipto Mangunkusumo Hospital Jakarta, Indonesia**

Health Science Journal of Indonesia 2019;10;15-20

**Background:** Acute transfusion reactions (ATRs) are a group of adverse events caused by blood transfusions. Manifestations of ATRs vary from mild to life threatening. At present, data about transfusion reactions in Indonesia are still limited. In this study, we aim to determine the characteristics of ATRs and its related factors.

**Methods:** This was a retrospective study of 288 subjects with ATRs. The study was conducted in Cipto Mangunkusumo Hospital, started from January to December 2017. ATRs were categorized based on the body systems affected and degree of manifestations.

**Results:** Packed red cells (PRC) was the predominant blood product (51.4%) which was transfused to subjects, followed by thrombocyte concentrate (TC), fresh frozen plasma (FFP), and. Cryoprecipitate. Five most common predominant symptoms of ATRs were pruritus/itch, febrile/increased temperature, chills, transient urticaria, and angioedema. Based on the affected body systems, the majority of ATRs manifested as dermatologic symptoms (56.6%). Based on the degree of manifestations, the majority of ATRs were categorized as mild degree (55.9%). Children tended to have milder symptoms (64.8%), which mostly manifested as dermatologic symptoms (65.4%). History of transfusion affected the degree of ATR significantly. Moderate degree of ATRs and constitutional symptoms were found more common in subjects who received PRC than other blood products.

**Conclusion:** Most of ATRs manifest as dermatologic symptoms, which represent allergic reactions. Only a small portion of ATRs are caused by incompatibility reactions. The manifestation and degree of ATRs are also affected by age, history of transfusion, and type of blood components.

**Keyword:** blood transfusion, acute transfusion reaction, transfusion history, age

WC 202

Lucky H. Moehario<sup>1</sup>, T. Robertus<sup>1</sup>, Yuliana Grace<sup>2</sup>,  
Enty Tjoa<sup>1</sup>

### **Screening of *Legionella pneumophila* from water sources in the hospitals in Jakarta**

Health Science Journal of Indonesia 2019;10;21-6

**Background:** Pneumonia due to Legionella bacteria is still a problem in various places in the world, causes 2-15% of pneumonia that need hospitalization. In Indonesia, legionellosis cases have been reported in Bali in 1996 and Tangerang in 1999. The existence of Legionella in healthcare facilities is potential to cause nosocomial infections. Legionella bacteria live in warm and humid waters, and are also commonly found in various water sources, such as water cooling systems, swimming pools, water reservoirs in hospitals, offices, hotels and housing. These bacteria contribute to the occurrence of community-acquired and nosocomial pneumonia.

**Methods:** This study was a descriptive research, and aimed to screen water sources and reservoirs in the hospitals in Jakarta for the existence of *Legionella pneumophilla* using Legionella Charcoal Yeast Extract (CYE) medium with various supplements. A total of 17 water samples from 2 hospitals located in West and North Jakarta have been examined.

**Results:** The results showed a total of 21 colonies with characteristics as of *L. pneumophila* were obtained from those water samples, however, none showed positive results in the latex agglutination test.

**Conclusion:** *L. pneumophila* was not found thus far in the water sources in these two hospitals. A more sensitive and specific approaches might be used to enable the findings of *L. pneumophila*

**Keywords:** Legionellosis, *Legionella pneumophila*, BCYE medium

W 100

Cicik Opitasari, Nurhayati

**Evaluation of claim submission and returning for BPJS inpatient services: a case study of hospital X in 2017**

Health Science Journal of Indonesia 2019;10;27-31

**Background:** incomplete and late claim submission may result in the delay of claim payment. The impact of late payment will certainly disrupt the cash flow of the hospital. This study aims to evaluate the claim submission and returning for BPJS inpatient services.

**Methods:** this was cross sectional study with a case study design approach. The source of data used was submission and returned claim data from hospital financing department during the period of January to June 2017. The data were analyzed descriptively.

**Results:** the highest frequency for inpatients claim submission was 17 times and the lowest was 13 times. The hospital submit the claim file almost every 2-3 days. Of the 11.945 inpatient claims, as many as 3.013 claim files were returned by BPJS. The total claim amounts of 11,945 files was Rp. 146.967.494.700,- and, the total amount of returned claim was Rp. 45.150.888.100,-. The reasons of claim returned including administrative completeness, incomplete summary discharge, confirmation of coding, inappropriate files, unreadable TXT in BPJS application and supporting examination. The most common causes of claim files returned was confirmation of coding (42.4%) and incompleteness of discharge summary (30.3%)

**Conclusion:** the hospital was never late in submitting claim documents but the claim returned by BPJS were still high. The most common causes of claim returned to the hospital was coding confirmation and incompleteness of discharge summary.

**Keywords:** evaluation, claim, submission, returning

WS 130

Muhammad Hidayat Sahid

**Correlation of overweight and academic achievement at grade 1-3 pupil at school of highscope Indonesia 2018**

Health Science Journal of Indonesia 2019;10;32-40

**Background:** Based on WHO data in 2011, 1 in 10 children in the world are obese (WHO, 2011). Nutritional status data in children aged 5-12 years in DKI Jakarta shows 14.0% underweight and overweight 6.8%. Data specifically for the South Jakarta region is 7.4% underweight and 7.3% overweight. Nutritional problems are one of the important factors that influence student academic achievement. The purpose of the study: to determine the effect of nutritional status on academic achievement of students in grades 1-3 in elementary school.

**Methods:** the design used was a retrospective cohort by looking at the relationship between the School Wide Assessment (SWA) score and the nutritional status of children in the previous 9 months. The population in this study were students in grades 1-3 at HighScope Indonesia School with a total sampling of 480 children.

**Results:** The results of this study indicate that there is a significant relationship between variables of nutritional status on academic achievement 6:29 RR (95% CI 3.82-10.35). In the cox regression analysis showed good nutritional status had RR at 3.17 (95% CI 2.404 to 4.204) and was significant at p-value 0.000. While other variables indicate that there is no significant relationship with the risk of having poor academic performance. In the final model cox regression analysis on variable nutritional status on achievement also showed RR values of 3.09 (95% CI 2.365 to 4,053) p-value 0,000.

**Conclusion:** Children who are overweight are at risk for having bad academic achievement of 6.3 times.

**Keywords:** Nutritional status, academic achievement, risk factors, retrospective cohort

WA 540

Ida Diana Sari, Harimat Hendarwan, Rizqiana Halim

### **The evaluation of Nusantara Sehat program using Nusantara Sehat Public Health Index**

Health Science Journal of Indonesia 2019;10;41-50

**Backgrounds:** Indonesia's geographical factors in the form of land, oceans, mountains, and scattered islands have caused the distribution of health workforce and access to health services are not optimal. Based on the Minister of Health regulation, the government seeks to utilize health human resources specifically for a certain period, with certain number and types, in order to improve access and quality of health service to health service facilities, especially in remote area through the Nusantara Sehat Program (*Health Indonesia Program-NS*).

**Methods:** In 2015, NS Team Batch 1 and 2 were assigned to 120 primary health care center (Puskesmas) in remote areas for 2 years. Then in 2017 after the term ends, NS program evaluation were conducted in 15 provinces, 27 districts, and 60 Puskesmas from Feb to Dec 2017.

**Results:** This evaluation aims to analyze the impact of NS program on public health index using Pre and Post-Test Intervention with Control Design. The results of program evaluation showed that in 2017 there was a change in the average public health index compared to 2015, both in intervention and control Puskesmas ( $p = 0,000$ ). The independent t-test result on the delta of index change indicated that public health index improvement at intervention Puskesmas is greater than the control ( $p = 0,046$ ).

**Conclusions:** The assignment of NS Team at the Puskesmas has brought improvement of public health index. Further observations are needed regarding the sustainability and the cost benefit analysis of NS Program.

**Keywords:** Program evaluation, Nusantara Sehat, Public Health Index, Indonesia.

WP 480

Puti Sari Hidayangsih

### **Residential area, hygiene behaviour, and precervical lesions of women aged 25-64 years in Indonesia**

Health Science Journal of Indonesia 2019;10;51-7

**Background:** Cervical cancer is a cancer with the highest prevalence in Indonesia. This study aims to identify the relationship between residential area, personal hygiene behavior, and precancerous cervical lesions in ever-married women aged 25-64 years in Indonesia.

**Method:** This study uses data on the 2016 Non-Communicable Disease Research in urban areas in 34 Indonesian provinces. The population and sample were ever-married women aged 25-64 years who were interviewed and also performed cervical smear extraction using the Visual Inspection with Acetic Acid (VIA) method to determine indications of the prevalence of cervical precancerous lesions. Relationship analysis using logistic regression with enter method, with a total sample analyzed by 37,456 respondents.

**Results:** The results of the analysis found a proportion of 7% of women with positive VIA test results. Women living in the vicinity of industrial sites were 1.2 times at risk (Adjusted OR = 1.2; 95% CI = 1.1-1.4) positive for VIA results than those who did not live in the area. While individual hygiene behaviors such as cleaning genitals after completing sexual intercourse did not significantly affect the positive VIA results.

**Conclusion:** There is a relationship between living in an industrial environment with positive VIA results in women aged 25-64 years showing the importance of regular early screening among women, especially those who live in industrial areas.

**Keywords:** Precancerous lesions, cervix, VIA, environment, industry

QZ 204

Santi Dwiningsih, Agung Dwi Laksono

**Indonesia's readiness to implement the HPV vaccine mandatory for school age**

Health Science Journal of Indonesia 2018;9;58-66

**Background.** Prostitution that appears together with massive industry raises health problems, socio-economic problems, and culture. This article was intended to explore factors related to prostitution practices in Benjina and explore the potential for controlling the impact of sex transmission disease.

**Methods.** This qualitative study was carried out with an ethnographic approach. In-depth interviews and participatory observation were carried out on 30 informants who were directly related to the practice of prostitution in Benjina.

**Results.** No localization was found at Benjina. The practice of prostitution was found to be commonplace in a place called karaoke houses that provided simple singing equipment, liquor, and sexual services. There were 46 female sex workers who worked in 12 karaoke houses. Economic factors were found to be the dominant factor driving the perpetrators of prostitution, in addition to revenge. There are some obstacles to using condoms in this practice. Among them were the forms of penile physiology that experience modification, and the relationship of special sex workers with their lovers. There was a *Sasi* potential that can be used as an effort to control sex transmission disease.

**Conclusion.** *Sasi* as a customary law has the potential to be a positive law to implement condomization as a whole in Benjina.

**Keywords:** Sexually transmitted disease, prostitution, customary law, *Sasi*, traditional customs.

W 100

Mardiati Nadjib, Purwa Kurnia Sucahya, Mondastri Korib, Ratih Oktarina, Pujiyanto, Amila Megraini, Hendri Hartati, Pandu Harimurti

**Policy options to integrate HIV services into Social Health Insurance (JKN) in Indonesia**

Health Science Journal of Indonesia 2019;10;67-76

**Background:** HIV and AIDS program in Indonesia is planned to be financed by domestic sources after depending on external sources for many years. Indonesia has started its Social Health Insurance scheme so called Jaminan Kesehatan Nasional (JKN) program in 2014, that covers HIV treatment including opportunistic infection. Research question is whether JKN could expand its benefit package to public health interventions without hampering service provision. Converting HIV program that has been subsidized by the Government needs careful considerations. The study aimed to assess scenarios on cost and utilization to support decision on integration of HIV interventions into the JKN benefit package.

**Method:** The study assessed the current coverage and funding mechanisms for HIV-related services, JKN membership, key target populations, and estimated premium for HIV services up to 2019. We captured cost and utilization from national and subnational levels as the baseline through an observational study. Researchers developed model and scenarios on the projection of cost and utilization of various HIV program activities and its consequences.

**Result:** We developed scenarios based on benefit covered by JKN. current services mostly covered by government. The Care and treatment could be possibly covered by the JKN, with support from government for prevention and ART.

**Conclusion:** The scenarios show that provision of HIV services within the basic benefits package of JKN would require a reasonable cost per member per month, depending on the comprehensiveness of the benefit. A clear roadmap should be developed to ensure all services provided are affordable and in good quality.

**Keywords:** Universal Health Coverage, HIV AIDS, Policy Option