oito hospitais de Fortaleza, Brasil, durante o período de janeiro a dezembro de 2018. Foram incluídos os tratamentos dos pacientes que apresentaram perfil de resistência aos carbapenêmicos no antibiograma. Os exames de swabs retais foram excluídos da análise. Os dados dos medicamentos e custos dos tratamentos foram obtidos pelo sistema da operadora. ***Results:*** Foram analisados 119 pacientes durante esse período, no qual foram registrados 228 exames com resultado de cultura positiva multirresistente, dos quais a espécie *Klebsiella pneumoniae* apresentou uma frequência de isolamento de 51,31% (117/228), *Pseudomonas aeruginosa* 32,89% (75/228), outras 15,78% (36/228). O custo total estimado dos medicamentos durante o ano de 2018 foi U$ 1.139.989,61. O custo médio por paciente foi de U$ 9.579,75. Foram utilizadas 1.048 terapias antimicrobianas, sendo as classes farmacológicas mais onerosas: os carbapenêmicos (U$ 376.097,29); poliênicos (U$ 145.829,33) e equinocandinas (U$ 114.298,73) representando juntos 55,80% do custo total estimado. ***Conclusions:*** Os resultados mostram um valor significativo de culturas positivas para patógenos multirresistentes, o que acarreta em um aumento nas despesas do tratamento, evidenciando a necessidade de novos estudos para monitorar os gastos com esses medicamentos, a fim de diminuir seus custos e aumentar o uso racional dos mesmos.

PIN6
O IMPACTO ECONOMICO NA AVALIACAO DO INFECTOLOGISTA NO PROGRAMA DE GESTAO CLINICA DO USO DE ANTIMICROBIANOS EM HOSPITAL PRIVADO DE FORTALEZA- CE, BRASIL

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Objectives: Estimar o impacto econômico da estratégia de avaliação do infectologista em um programa de gestão clínica de uso de antimicrobianos para utilização racional. ***Methods:*** O estudo tem caráter longitudinal e retrospectivo avaliando um hospital privado de Fortaleza- CE, Brasil, no período de 2012 a 2018, sob perspectiva de uma Operadora de Plano de Saúde (OPS) pela Área de Assistência e Auditoria Farmacêutica (ASSFAR). O programa é executado através do sistema informatizado e tabela de preços dos medicamentos da OPS. Avaliou-se as terapias com antimicrobianos (ATM) de reserva terapêutica, superior a 4 dias de tratamento e com parecer do infectologista registrado em prontuário. Foram analisados pareceres com orientação de tempo até 10 dias e sua efetividade. Excluiu-se da análise os medicamentos com sugestão de tempo superior a 10 dias por fugir das metas do programa e foram excluídas as terapias com Anfotericina por viés de custo. A economia foi medida através do custo real de tratamento e o custo simulado caso o esquema fosse extrapolado aos 14 dias. Mensurou-se também o potencial custo evitável daqueles esquemas superiores ao sugerido no parecer por meio do custo real do tratamento e o custo do tratamento sugerido pelo infectologista. ***Results:*** Obteve-se 3.093 terapias inclusas nos critérios, dessas 85%(2.645) foram utilizadas conforme sugestão do infectologista gerando uma economia estimada em U$ 1 milhão. Dos esquemas realizados com tempo superior ao sugerido pelo parecer, seja por receio de suspensão do antimicrobiano ou pela clínica desfavorável, seria possível evitar um custo de U$108 mil (15%, 448 esquemas). ***Conclusions:*** A avaliação clínica do infectologista se mostrou importante estratégia de redução de custos diretos e potenciais, além de orientar o manejo clínico desses medicamentos representando uma importante estratégia de uso racional desses medicamentos.

PIN7
ECONOMIC EVALUATION OF ELVITEGRAVIR/COBICISTAT/EMTRICITABINE/TENOFOVIR ALAFENAMIDE (GENVOYA®) AS A COMPLETE TREATMENT REGIMEN FOR HIV-1 INFECTION IN ADULTS WHO ARE ANTIRETROVIRAL THERAPY-NAÏVE IN MEXICO

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Objectives: EVG/COBI/FTC/TAF (GENVOYA®) is a single-tablet regimen for the treatment-naive and virologically suppressed HIV-1 infected adult and pediatric patients 12 years of age and older with no known mutations associated with resistance to the individual components of EVG/COBI/FTC/TAF. It contains three different types of HIV drugs: two nucleotide/nucleoside reverse transcriptase inhibitors and one integrase inhibitor. It also contains a pharmacokinetic enhancer, a drug that has no activity against HIV, but boosts the blood levels and effectiveness of other drugs. The objective of this study is to assess the Economic Efficiency of EVG/COBI/FTC/TAF vs the current antiretroviral-naive (RAL+FTC/TDF y EFV and FTC/TDF) regimen in Mexico. ***Methods:*** Similar efficacy and safety of EVG/COBI/FTC/TAF regarding the current ARV regimens used in Mexico was based on clinical evidence from 3 phase 3 clinical trials. Hence a cost minimization analysis was conducted to assess the expected treatment costs for HIV-1 infection in adults who are antiretroviral therapy-naïve. The costs evaluated included the costs of HIV-1 treatment regimen currently used in Mexico (RAL+FTC/TDF and EFV+FTC/TDF) compared to EVG/COBI/FTC/TAF. The time horizon measured was one year, so no discount rate was considered. The costs are presented in USD. This study was conducted from the institutional perspective. ***Results:*** The evidence and the results form the cost-minimization analysis confirms that EVG/COBI/FTC/TAF the less costly alternative when compared to the current HIV-1 regimen average cost, $4,427.08 ($3,284.37-$4,569.79) vs $6,239.58 ($5,015.62-$6,463.54), respectively. So EVG/COBI/FTC/TAF generates $1,812.50 ($1,731.25-$2,893.75) savings per patient. The base case analysis indicates that adding EVG/COBI/FTC/TAF is a cost-saving alternative. For a cohort of 1,000 patients the potential savings are $1,812,500.00 for the public institutions in Mexico. ***Conclusions:*** Adding EVG/COBI/FTC/TAF to the Mexican formularies generates important savings for the Mexican healthcare system (since EVG/COBI/FTC/TAF lead to a reduction of direct medical) and provides similar patient outcomes compared to (RAL+FTC/TDF y EFV and FTC/TDF.

PIN8
ANALISE ECONOMICA DE CUSTOS DE TRATAMENTO DE INFECCOES POR MICROORGANISMOS GRAM-POSITIVOS RESISTENTES: STAPHYLOCOCCUS AUREUS RESISTENTE A METICILINA (MRSA) E ENTEROCOCCUS SPP RESISTENTES A VANCOMICINA (VRE)

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Objectives: Realizar uma análise econômica dos custos de antimicrobianos para infecção por Staphylococcus aureus resistente à meticilina (MRSA) e Enterococcus spp resistentes à vancomicina (VRE). ***Methods:*** Trata-se de um estudo descritivo e retrospectivo com base no perfil de resistência dos pacientes internados em oito hospitais credenciados a uma operadora de saúde em Fortaleza, Brasil, durante o período de 2018. A partir de uma base de dados realizada em Microsoft® Excel® foram catalogadas e filtradas culturas positivas para MRSA e VRE. Após, relacionou-se os resultados obtidos com a antibioticoterapia utilizada, tempo de tratamento e seus custos diretos pagos pela operadora. Os exames de swabs retais foram excluídos da análise. ***Results:*** Foram analisados 13 pacientes, dos quais apresentaram 18 culturas positivas, sendo que 14 (78%) foram positivas para MRSA e 4 (22%) para VRE resultando em 83 terapias antimicrobianas. O custo total para o tratamento de infecções por MRSA e VRE foi de U$ 76.413,49. Dentre as classes de antimicrobianos utilizados para pacientes com MRSA, as mais dispendiosas foram os Carbapenêmicos U$ 21.077,33 (43%); os Glicopeptídeos U$ 9.775,55 (20%) e os Beta lactâmicos + inibidores de beta lactamase U$ 8.542,77 (17%), representando 80% do custo total. Para os pacientes com VRE destacaram-se as classes de Carbapenêmicos U$ 7.789,69 (29%); Equinocandinas U$ 6.480,39 (24%) e Oxazolidinonas U$ 4,026,53 (15%). O custo com a classe de espectro mais onerosa, os Carbapenêmicos, tanto para MRSA e VRE foi de U$ 28.867,03 representando 38% do custo total. ***Conclusions:*** Avaliando apenas um ano e resultando em poucos pacientes com infecção por esses tipos de microorganismos é possível perceber que o custo direto é expressivo apontando a importância de políticas de controle desses antimicrobianos e prevenção de infeções hospitalares.

PIN9
PUBLIC HEALTH AND ECONOMIC IMPACT OF A GENDER-NEUTRAL QUADRIVALENT HUMAN PAPILLOMAVIRUS VACCINATION PROGRAM IN COLOMBIA

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Objectives: To assess the public health and economic impact of a gender-neutral vaccination (GNV) quadrivalent HPV vaccine (4vHPV) program in Colombia compared to the current female-only vaccination (FOV) program in the 9-10-year-old cohort at varying vaccination coverage rates (VCR). ***Methods:*** A published HPV-type dynamic transmission model was used to compare FOV and GNV with two-dose 4vHPV for the prevention of HPV-related cervical cancer (CC), cervical intraepithelial neoplasia (CIN1/2/3), and genital warts (GW) over 100 years in Colombia. The model compared FOV with GNV at VCRs of 35% (scenario A), 50% (scenario B) and different VCR between females/males (50%/35%) (scenario C). The disease management cost

savings (DMCS) were calculated subtracting the costs of vaccination from the disease costs avoided. ICERs were calculated from cost (USD) and QALYs. ***Results:*** Over 100 years, a GNV program using the scenarios A, B, and C showed an incremental reduction in disease cases compared with the FOV program, respectively, at the population level as follows in females: CC (8,367, 38,396 and 35,478 cases), HPV16/18-related CIN1 (108,897, 509,578 and 469,791), CIN2/3 (259,954, 1,239,592 and 1,145,328), HPV6/11-related CIN1 (51,824, 220,224 and 198,725), and GW (1,268,263, 4,348,1363 and 3,856,351), and in males: GW (3,799,640, 6,786,433 and 5,343,662). The incremental cumulative percent reduction in deaths from CC after 100 years with GNV scenarios A, B and C relative to FOV are projected to be, respectively, 3.4%, 15.6% and 14.4%. The DMCS were USD$76,678,534, USD$288,147,805 and USD$258,937,523, respectively. The scenario A was very cost-effective with ICER of USD$181/QALY and scenarios B and C were cost savings with strongly dominating ICERs. ***Conclusions:*** In Colombia, a 4vHPV GNV program would result in greater reductions in HPV-related disease incidence and be cost saving compared with FOV. These findings are conservative given that other HPV-related cancers and disease in females and males were not considered.

PIN10

PUBLIC HEALTH AND ECONOMIC IMPACT OF A HUMAN PAPILLOMAVIRUS VACCINATION PROGRAM FOR FEMALES AGED 9 YEARS IN EL SALVADOR

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Objectives: To assess the public health and economic impact of a human papillomavirus (HPV) vaccination program with a quadrivalent (HPV6/11/16/18) and bivalent (HPV 16/18) vaccine in 9-year-old females versus only-screening strategy in El Salvador. ***Methods:*** A previously developed transmission dynamic mathematical model was adapted to evaluate the impact of routine vaccination of 9-year-old females in El Salvador. The model projected 80% coverage for two doses of both HPV vaccines. El Salvador specific data was used from literature where available; default values were used otherwise. Input data included demographic, behavioral, epidemiological and screening parameters, and direct treatment costs of HPV-related morbidities from a public health perspective. ***Results:*** In a 100-year period, both HPV vaccines will reduce in the same level the HPV 16-18 related burden of disease and associated costs in females: CC (45.6%, 22,177), CIN 2/3 (69.4%; 81,440) and CIN1 (70.2%, 81,440). The cumulative percent reduction in deaths from cervical cancer after 100 years with both vaccines are projected to be 42.5% (9,709 deaths). As compared to a bivalent vaccination program, a quadrivalent vaccination program would result in additional reductions of HPV 6/11-related disease incidence/disease cases at the population level as follows in females: genital warts (78.3%; 488,977 cases) and HPV6/11-related CIN1 (78%; 25,904 cases) and also in males through herd immunity: genital warts in males (75.6%; 189,574 cases). Under the model assumptions, the disease management cost savings (cost of vaccination – disease costs avoided) were US$ 161, 688, 947 and US$ 40,561,361 for a quadrivalent (HPV6/11/16/18) and bivalent (HPV 16/18) vaccination program, respectively, over 100 years. Both HPV vaccines were cost savings with strongly dominating ICERs. ***Conclusions:*** In El Salvador, routine vaccination of 9-year-old females with a quadrivalent HPV6/11/16/18 vaccine has incremental public health and economic impact as compared to a bivalent HPV 16/18 vaccine.

PIN11

COST-EFFECTIVENESS OF INTERFERON-GAMMA RELEASE ASSAY COMPARED TO TUBERCULIN SKIN TEST FOR DETECTION OF LATENT TUBERCULOSIS IN PATIENTS WITH RENAL FAILURE UNDERGOING HEMODIALYSIS

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Objectives: To estimate the incremental cost-effectiveness ratio of Interferon Gamma Release Assay (IGRA) for the diagnosis of latent tuberculosis infection (LTBI) in patients with renal failure undergoing hemodialysis, compared to tuberculin skin test (TST) in the Brazilian Private Healthcare System (PHS). ***Methods:*** A decision tree model was developed based on the test performed and probability of TB activation. The direct medical costs of each test, treatment of adverse events of secondary chemoprophylaxis and treatment of TB complications were included, under the perspective of PHS. Since the treatment of LTBI and active TB are covered by Brazilian Public Healthcare System, these costs were not considered. The outcome considered was prevented cases of active TB. Costs are represented as Brazilian currency (BRL) Outcomes considered were prevented cases of active TB. Sensitivity analyses were performed to explore uncertainties. ***Results:*** IGRA dominates TST in this population. From a simulation of a cohort of 1000 patients with renal failure undergoing hemodialysis, it was estimated that the evaluation of ILTB with IGRA test is associated with 8 incremental cases of active TB avoided. The clinical benefit is accompanied by a decrease in the average cost per patient (-BRL 67,888). This lower cost is mainly related to the high cost for treating TB complications. ***Conclusions:*** Today, the standard test for LTBI detection is the TST. However, TST presents impaired accuracy in immunocompromised patients and alternatives are necessary for these patients. The use of IGRA for LTBI detection in patients with renal failure undergoing hemodialysis is related to a greater capacity of avoiding TB active cases and consequent lower cost per patient.

PIN12

COST-EFFECTIVENESS OF INTERFERON-GAMMA RELEASE ASSAY COMPARED TO TUBERCULIN SKIN TEST FOR DETECTION OF LATENT TUBERCULOSIS IN RHEUMATOID ARTHRITIS PATIENTS USING IMMUNOBIOLOGICAL TREATMENTS

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Objectives: To estimate the incremental cost-effectiveness ratio of Interferon Gamma Release Assay (IGRA) for the diagnosis of latent tuberculosis infection (LTBI) in rheumatoid arthritis patients using immunobiological treatments, compared to tuberculin skin test (TST) under the Brazilian Private Healthcare System (PHS) perspective. ***Methods:*** A decision tree model was developed based on the probabilities of each test results and the probability of TB activation. The direct medical costs of each test, treatment of adverse events of secondary chemoprophylaxis and treatment of TB complications were considered under the perspective of PHS. Since the treatment of LTBI and active TB are covered by Brazilian Public Healthcare System, these costs were not included. The outcome considered was prevented cases of active TB. Costs are represented as Brazilian currency (BRL) Sensitivity analyses were performed to explore uncertainties. ***Results:*** IGRA dominates TST in this population. From a simulation of a cohort of 1000 rheumatic patients on treatment with immunobiological drugs, it was estimated that the evaluation of ILTB with IGRA test is associated with 6 incremental cases of active TB avoided. The clinical benefit is accompanied by a decrease in the average cost per patient (-BRL 82,790). The reduction in cost is mainly related to the high cost for treating TB complications. ***Conclusions:*** Today, the standard test for LTBI detection is the TST. However, TST presents impaired accuracy in immunocompromised patients and alternatives are necessary for these patients. The use of IGRA for LTBI detection in rheumatoid arthritis patients using immunobiological treatments is related to a greater capacity of avoiding TB active cases and consequent lower cost per patient.

PIN13

BUDGET IMPACT ANALISIS (BIA) OF THE IMPLEMENTATION OF HIGH-RISK HPV GENOTYPING IN PATIENTS OF THE SOCIAL SECURITY OF ECUADOR (IESS) FOR PREVENTION OF CERVICAL CANCER

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Objectives: To demonstrate that the implementation of high-risk test in the algorithm for cervical cancer prevention has positive effects on the Social Security institution's budget by reducing the costs associated with the treatment of cervical malignancy. ***Methods:*** The BIA has been carried out from the perspective of Social Security with patients between 30 and 65 years of age at the second level of care, screened with the cobas®4800 for high-risk HPV in the years 2015-2016. The BIA, in this period, has been calculated by imputing the cost of implementing the high-risk HPV test to the number of patients identified, by applying the local epidemiological incidence (11.9%)* estimating who will subsequently follow the algorithm to identify those who have premalignant or malignant lesions. Based on the protocol to be followed with the women tested, the one-year follow-up of a representative sample is reviewed in order to identify the adequate follow-up. The costs of treatment of the different stages of cervical cancer are in accordance with the local study of supply and demand of oncological services and estimation of costs associated with cervical cancer in Ecuador in 2017. ***Results:*** From the total population screened (19.686) with the high-risk HPV test, 2603 women were positive. From this group, 104 women (4%) can possibly develop cervical cancer, which represents a potential cost to 10 years in treatment for cervical cancer including all stages of the disease, according to the progression of the disease. ***Conclusions:*** The implementation of the high-risk HPV test allows us to identify women who may have an increased risk of developing cervical cancer, generating positive budgetary impacts to the institution. If all the patients in the follow-up program can be included, it would save the institution approximately 15'196.933,56 USD in treatment for cervical cancer including all stages of the disease.