

Varicella Infection (Chickenpox)

Selected References:

- American Academy of Pediatrics. 2009. Varicella-zoster infections. In: Pickering LK, Baker CJ, Kimberlin DW, Long SS, eds. Red Book: 2009. Report of the Committee on Infectious Diseases. 28th ed. Elk Grove Village, IL: American Academy of Pediatrics;714-727
- Arthur I. Eidelman, et al. 2012. Breastfeeding and the Use of Human Milk. *Pediatrics* March 2012; 129 (3): e827-e841.
- Bohlke K, et al. 2003. Postpartum varicella vaccination: is the vaccine virus excreted in breast milk? *Obstet Gynecol* 102(5 Pt 1):970-977.
- Centers for Disease Control and Prevention. 1996. Prevention of varicella. *MMWR*; 45(RR-11);1-36.
- Centers for Disease Control and Prevention. 2013. Updated Recommendations for Use of VariZIG — United States, 2013. *MMWR*. 62(28)574-576.
- Centers for Disease Control and Prevention. 2016. Guidelines for vaccinating pregnant women (2012, updated 2016). <https://www.cdc.gov/vaccines-pregnancy/hcp/vaccination-guidelines/index.html>
- Chan DYL, et al. 2017. Human varicella zoster virus is not present in the semen of a man affected by chickenpox during the in vitro fertilisation of his wife. *Andrologia* 49(10):e12822.
- Cohen A, et al. Congenital varicella syndrome: the evidence for secondary prevention with varicella-zoster immune globulin. *CMAJ*;183(2):204-208.
- Committee on Infectious Diseases, American Academy of Pediatrics. 1995. Recommendations for the use of live attenuated varicella vaccine. *Pediatrics*; 95:791-796.
- Enders, G et al. 1994. Consequences of varicella and herpes zoster in pregnancy: prospective study of 1739 cases." *Lancet (London, England)* vol. 343,8912: 1548-51.
- Fabiano, Valentina et al. 2013. Herpes zoster in an immunocompetent boy following intrauterine exposure to varicella-zoster virus." *Cutis* vol. 91,3: 127-8, 140.
- Frederick IB, et al. 1986. Excretion of varicella-herpeszoster in breast milk. *Am J Obstet Gynecol*; 154:1116-1117.
- Gruslin A, et al; SOGC. 2008. Immunization in pregnancy: No. 220, December 2008. *Int J Gynaecol Obstet*; 105(2):187-191.
- Harger, James H et al. 2002. Frequency of congenital varicella syndrome in a prospective cohort of 347 pregnant women." *Obstetrics and gynecology* vol. 100,2: 260-5.
- Hayward K, et al. 2018. Management of herpes zoster (shingles) during pregnancy. *J Obstet Gynaecol* 38(7):887-894.
- Konopka, A., Szczepaniak, Z., Wdowiak, N., Lissak, K., Komarów, M., Choinka, M., ... Kalisiak, J. (2024). A Comprehensive Review of TORCH Syndrome: Characterization and Prevention Strategies. *Quality in Sport*, 21, 53987.
- Lamont, Ronald F et al. 2011. Varicella-zoster virus (chickenpox) infection in pregnancy." *BJOG : an international journal of obstetrics and gynaecology* vol. 118,10: 1155-62.
- Marin M, et al. 2013. Closure of Varicella-Zoster Virus-Containing Vaccines Pregnancy Registry – United States. *MMWR*. 63(33);732-733.
- Mohsin, M. S., Gaballa, N. F., & Elsayed, W. (2024). Varicella Orchitis: A Case Report and Literature Review. *Cureus*, 16(8), e66978.
- National Center for Immunization and Respiratory Diseases. 2011. General recommendations on immunization — recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR Recomm Rep*. 60(2):1-64. Erratum in: *MMWR Recomm Rep*. 2011;60:993.
- Petignat, P et al. 2001. Fetal varicella-herpes zoster syndrome in early pregnancy: ultrasonographic and morphological correlation. *Prenatal diagnosis* vol. 21,2 (2001): 121-4.

- Tan MP, Koren G. 2006. Chickenpox in pregnancy: revisited. *Reprod Toxicol*; 21(4):410-20.

Dúvidas? Ligue para 866.626.6847 | Envie mensagem de texto para 855.999.3525 | Envie e-mail ou acesso o Chat no endereço MotherToBaby.org.

Disclaimer: MotherToBaby Fact Sheets are meant for general information purposes and should not replace the advice of your health care provider. MotherToBaby is a service of the non-profit Organization of Teratology Information Specialists (OTIS). Copyright by OTIS, 1 de fevereiro de 2025.

Varicella Infection (Chickenpox)

Selected References:

- Aagaard J, et al. 1991. Prostatic tissue levels of ofloxacin. *Urology*, 38:380-382.
- Cahill JB Jr, et al. 2005. Levofloxacin secretion in breast milk: a case report. *Pharmacotherapy*, 25:116-118.
- Caplin Sterile Limited. 2024. Ofloxacin product label. Available at: <https://dailymed.nlm.nih.gov/dailymed/drugInfo>. Accessed June 20 2024.
- Danisovicova A, et al. 1994. Magnetic resonance imaging in children receiving quinolones: no evidence of quinolone-induced arthropathy. A multicenter survey. *Chemotherapy*, 40:209-214.
- Drobac PC, et al. 2005. Treatment of multidrug-resistant tuberculosis during pregnancy: long-term follow-up of 6 children with intrauterine exposure to second-line agents. *Clin Infect Dis*, 40:1689-1692.
- Erhart B, et al. 1998. Ofloxacin: the next generation of antibiotic in sperm and embryo cultures for assisted reproductive technologies. *Fertil Steril*, 69(2):246-251.
- Falagas ME, et al. 2007. Arrhythmias associated with fluoroquinolone therapy. *Int J Antimicrob Agents*, 29(4):374-379.
- Giamarellou H, et al. 1989. Pharmacokinetics of three newer quinolones in pregnant and lactating women. *Am J Med*, 87(5A):49S-51S.
- Loebstein R, et al. 1998. Pregnancy outcome following gestational exposure to fluoroquinolones: a multicenter prospective controlled study. *Antimicrob Agents Chemother*, 42:1336-1339.
- Muanda Ft, et al. 2017. Use of antibiotics during pregnancy and the risk of major congenital malformations: a population based cohort study. *Br J Clin Pharmacol*, 83:2557-2571.
- Naber KG, et al. 1993. Penetration of ofloxacin into prostatic fluid, ejaculate and seminal fluid. *Infection*,

21(2):98-100.

- Nivagen Pharmaceuticals Inc. 2023. Ofloxacin product label. Available at: <https://dailymed.nlm.nih.gov/dailymed/drugInfo>. Accessed June 20 2024.
- Padberg S, et al. 2014. Observational cohort study of pregnancy outcomes after first-trimester exposure to fluoroquinolones. *Antimicrob Agents Chemother*, 58(8):4392-4398.
- Peled Y, et al. 1991. Ofloxacin during the second trimester of pregnancy. *DICP*, 25(11):1181-1182.
- Schaefer C, et al. 1996. Pregnancy outcome after prenatal quinolone exposure. Evaluation of a case registry of the European Network of Teratology Information Services (ENTIS). *Eur J Obstet Gynecol Reprod Biol*, 69(2):83-89.
- Schramm P. 1986. Ofloxacin: concentration in human ejaculate and influence on sperm motility. *Infection*, 14 Suppl 4:S274-S275.
- Shao S, et al. 2023. Association between antibiotic exposure and the risk of infertility in women of childbearing age: a case-control study. *Ecotoxicol Environ Saf*, 249: 114414.
- Shin YJ, et al. 2018. Pregnancy outcomes in women reporting exposure to ofloxacin in early pregnancy. *J Obstet Gynaecol*, 38(6):807-812.
- Wilton LV, et al. 1998. The outcomes of pregnancy in women exposed to newly marketed drugs in general practice in England. *British J Obstet Gynecol*, 105:882-889.
- Yamaguchi H, et al. 2007. Post-marketing surveillance of the safety of levofloxacin in Japan. *Chemotherapy*, 53(2):85-103.

Dúvidas? Ligue para 866.626.6847 | Envie mensagem de texto para 855.999.3525 | Envie e-mail ou acesso o Chat no endereço MotherToBaby.org.

Disclaimer: MotherToBaby Fact Sheets are meant for general information purposes and should not replace the advice of your health care provider. MotherToBaby is a service of the non-profit Organization of Teratology Information Specialists (OTIS). Copyright by OTIS, 1 de fevereiro de 2025.

Varicella Infection (Chickenpox)

Selected References:

- Bhoj E, et al. 2013. Late-onset partial complex seizures secondary to cortical dysplasia in a patient with

maternal vitamin K deficient embryopathy: comments on the article by Toriello et al. [2013] and first report of the natural history. *Am J Med Genet A*. 161(9):2396-2398.

- Dickson RC, et al. 1994. Antenatal vitamin K therapy of the low-birth-weight infant. *Am J Obstet Gynecol* 170:85-89.
- Eventov-Friedman S, et al. 2009. Third trimester fetal intracranial hemorrhage owing to vitamin K deficiency associated with hyperemesis gravidarum. *J Pediatr Hematol Oncol*. 31(12):985-988.
- Goto T, et al. 2018. A rare case of fetal extensive intracranial hemorrhage and whole-cerebral hypoplasia due to latent maternal vitamin K deficiency. *J Neonatal Perinatal Med* 11(2): 191-194.
- Kawamura Y, et al. 2008. Vitamin K deficiency in hyperemesis gravidarum as a potential cause of fetal intracranial hemorrhage and hydrocephalus. *Prenat Diagn*. 28(1):59-61.
- Kazzi NJ, et al. 1989. Maternal administration of vitamin K does not improve the coagulation profile of preterm infants. *Pediatrics* 84:1045-1050.
- Klebanoff MA, et al. 1993. The risk of childhood cancer after neonatal exposure to vitamin K. *N Engl J Med* 329: 905-908.
- Lee S, et al. 2022. Fetal intracranial hemorrhage and maternal vitamin K deficiency induced by total parenteral nutrition: A case report. *Medicine (Baltimore)*. 101(1):e28434.
- Morales WJ, et al. 1988. The use of antenatal vitamin K in the prevention of early neonatal intraventricular hemorrhage. *Am J Obstet Gynecol* 159:774-779.
- Njisten K, et al. 2022. Hyperemesis gravidarum and vitamin K deficiency: a systematic review. *Br J Nutr* 128(1):30-42.
- Pomerance JJ, et al. 1987. Maternally administered antenatal vitamin K1: effects on neonatal prothrombin activity, partial thromboplastin time, and intraventricular hemorrhage. *Obstet Gynecol* 70:235-241.
- Robinson JN, et al. 1998. Coagulopathy secondary to vitamin K deficiency in hyperemesis gravidarum. *Obstet Gynecol* 92:673-675.
- Roman E, et al. 2002. Vitamin K and childhood cancer: analysis of individual patient data from six case-control studies. *Br J Cancer* 86:63-69.
- Sotodate G, et al. 2019. Fetal intracranial hemorrhage due to maternal subclinical vitamin K deficiency associated with long-term eating disorder. *J Obstet Gynaecol Res*. 2019 Feb;45(2):461-465.
- Toriello HV, et al. 2013. Maternal vitamin K deficient embryopathy: association with hyperemesis gravidarum and Crohn disease. *Am J Med Genet A*. 161A(3):417-429.
- Yasuda K, et al. 2023. Intrauterine fetal death due to fetal intracranial hemorrhage associated with maternal vitamin K deficiency: A case report. *Case Rep Womens Health* 40: e00566.

Dúvidas? Ligue para 866.626.6847 | Envie mensagem de texto para 855.999.3525 | Envie e-mail ou acesso o Chat no endereço [MotherToBaby.org](https://www.MotherToBaby.org).

Disclaimer: MotherToBaby Fact Sheets are meant for general information purposes and should not replace the advice of your health care provider. MotherToBaby is a service of the non-profit Organization of Teratology Information Specialists (OTIS). Copyright by OTIS, 1 de fevereiro de 2025.

Varicella Infection (Chickenpox)

Selected References:

- Castilletti, et al. 2024. Replication-competent Oropouche virus in semen of traveler returning to Italy from Cuba, 2024. Emerging infectious diseases, 30(12), 10.3201/eid3012.241470.
- Centers for Disease Control and Prevention. 2024. Complications of Oropouche and Pregnancy. Available at URL: <https://www.cdc.gov/oropouche/health-effects/pregnancy.html> [Accessed October 25, 2024].
- Centers for Disease Control and Prevention. 2024. Interim Clinical Considerations for Pregnant Women with Confirmed or Probable Oropouche Virus Disease. Available at URL: <https://www.cdc.gov/oropouche/hcp/clinical-care/pregnancy.html> [Accessed October 25, 2024].
- Centers for Disease Control and Prevention. 2024. Interim Guidance for Evaluating and Managing Infants Born to Pregnant Women with Confirmed or Probable Oropouche Virus Disease. Available at URL: <https://www.cdc.gov/oropouche/hcp/clinical-care/infants.html> [Accessed October 25, 2024].
- das Neves Martins, et al. 2024. Newborns with microcephaly in Brazil and potential vertical transmission of Oropouche virus: a case series. The Lancet. Infectious diseases, S1473-3099(24)00617-0.
- Garcia Filho C, et al. 2024. A case of vertical transmission of Oropouche Virus in Brazil. N Engl J Med, 10.1056/NEJMc2412812.
- Martins-Filho, et al. 2024. Oropouche fever: reports of vertical transmission and deaths in Brazil. The Lancet. Infectious diseases, S1473-3099(24)00557-7.
- Pan American Health Organization, 2024. Epidemiological Update: Oropouche in the Americas Region, 15 October 2024. Available at URL: <https://www.paho.org/en/documents/epidemiological-update-oropouche-americas-region-15-october-2024> [Accessed November 8, 2024].

Dúvidas? Ligue para 866.626.6847 | Envie mensagem de texto para 855.999.3525 | Envie e-mail ou acesso o Chat no endereço [MotherToBaby.org](https://www.mothertobaby.org).

Disclaimer: MotherToBaby Fact Sheets are meant for general information purposes and should not replace the advice of your health care provider. MotherToBaby is a service of the non-profit Organization of Teratology Information Specialists (OTIS). Copyright by OTIS, 1 de fevereiro de 2025.

Varicella Infection (Chickenpox)

Selected References:

- American College of Obstetricians and Gynecologists (ACOG). 2017. Reaffirmed October 2021. Committee Opinion No. 711: Opioid use and opioid use disorder in pregnancy. *Obstet Gynecol*, 130:e81-e94.
- American Society of Addiction Medicine. 2017. Clinical Recommendations: Opioid Use and Opioid Use Disorder in Pregnancy. A Joint Opinion of the ACOG's Committee on Obstetric Practice and ASAM. Available at <https://www.asam.org/quality-care/clinical-recommendations/OUd-in-Pregnancy> [retrieved February 2025].
- Anderson JM, et al. 2020. Prenatal exposure to methadone or buprenorphine and long-term outcomes: a meta-analysis. *Early Human Development*, 143:104997.
- Asad M, et al. 2024. Reviewing the impact of maternal opioid use disorder on fetal development and long-term pediatric health outcomes. *Cureus*, 16(10):e72192.
- Aslaksen AK, et al. 2024. Children had increased risks of impaired motor and visual-motor skills after prenatal exposure to opioid maintenance therapy. *Acta Paediatr*, 113(6):1331-1339.
- Aslaksen AK, et al. 2024. Visual function in Norwegian children aged 5-13 years with prenatal exposure to opioid maintenance therapy: a case-control study. *Acta Ophthalmol*, 102(4):409-420.
- Austin A, et al. 2021. Prenatal use of medication for opioid use disorder and other prescription opioids in cases of neonatal opioid withdrawal syndrome: North Carolina Medicaid, 2016-2018. *Am J Public Health*, 111(9):1682-1685.
- Bello JK, et al. 2024. Pregnancy rates among women treated with medication for opioid use disorder. *J Gen Intern Med*, 39(8):1342-1348.
- Caritis SN, Venkataramanan R. A pharmacologic evaluation of buprenorphine in pregnancy and the postpartum period. *J Addict Med*, 19(2):129-134.
- Chao CR, et al. 2023. Effects of medications for opioid use disorder (MOUD) on fetal brain and cranial measurements. *Neurotoxicol Teratol*, 97:107177.
- Conradt E, et al. 2019. Prenatal opioid exposure: Neurodevelopmental consequences and future research priorities. *Pediatrics*, 144(3):e20190128.
- Coulson C, et al. 2021. Association of maternal buprenorphine or methadone dose with fetal growth indices and neonatal abstinence syndrome. *Am J Perinatol*, 38(01):028-036.
- Dean MP, et al. 2025. Increased prevalence of skeletal anomalies on ultrasound evaluation of buprenorphine-exposed human fetuses. *South Med J*, 118(1):39-44.
- Dorey A, et al. 2019. Possible buprenorphine toxicity in a breastfeeding neonate. *Clin Toxicol*, 57:889-890.
- Gawronski KM, et al. 2014. Neonatal outcomes following in utero exposure to buprenorphine/naloxone or methadone. *SAGE Open Medicine*, 2:2050312114530282.
- Giovannini E, et al. 2024. Fetal and infant effects of maternal opioid use during pregnancy: a literature review including clinical, toxicological, pharmacogenomic, and epigenetic aspects for forensic evaluation. *Children (Basel)*, 11(3):278.
- Handal M, et al. 2019. Prenatal exposure to opioid maintenance treatment and neonatal outcomes: nationwide registry studies from the Czech Republic and Norway. *Pharmacol Res Perspect*, 7(5):e00501.
- Harris E. 2023. Buprenorphine treatment may be safer than methadone during pregnancy. *JAMA*, 331(7):555.
- Hasan M, et al. 2024. Neurodevelopmental outcomes in children prenatally exposed to opioid maintenance treatment: a population-based study. *Pharmacotherapy*, 44(10):770-781.
- Hubbell A, et al. 2024. Extended-release buprenorphine in pregnancy. *Am J Addict*, 33(3):354-356.

- Ito, S. 2018. Opioids in breast milk: Pharmacokinetic principles and clinical implications. *J Clin Pharmacol*, 58 Suppl 10:S151-S163.
- Jansson LM, et al. 2017. Maternal buprenorphine treatment and infant outcome. *Drug Alcohol Depen*, 180:56-61.
- Jansson LM, et al. 2016. Maternal buprenorphine maintenance and lactation. *J Hum Lact*, 32:675-81.
- Jones HE, et al. 2012. Buprenorphine treatment of opioid-dependent pregnant women: a comprehensive review. *Addiction* 107, (Suppl. 1):5-27.
- Jones JD, et al. 2012. Polydrug abuse: a review of opioid and benzodiazepine combination use. *Drug Alcohol Depend*, 125(1-2):8-18.
- Hemmati Z, et al. 2022. Ophthalmic outcomes in children exposed to opioid maintenance treatment in utero: a systematic review and meta-analysis. *Neurosci Biobehav Rev*, 136:104601.
- Jansson LM, et al. 2024. Buprenorphine-naloxone maintenance and lactation. *J Hum Lact*, 40(1):113-119.
- Jarlenski M, et al. 2024. Association between buprenorphine dose and outcomes among pregnant persons with opioid use disorder. *Am J Obstet Gynecol*, S0002-9378(24)01178-5.
- Kacinko S, et al. 2008. Correlations of maternal buprenorphine dose, buprenorphine, and metabolite concentrations in meconium with neonatal outcomes. *Clin Pharmacol Ther*, 84(5):604-612.
- Kallenbach K, et al. 2012. Predicting treatment for neonatal abstinence syndrome in infants born to women maintained on opioid agonist medication. *Addiction* 107, (Suppl. 1):45-52.
- Kanervo MM, et al. 2023. Buprenorphine-naloxone, buprenorphine, and methadone throughout pregnancy in maternal opioid use disorder. *Acta Obstet Gynecol Scand*, 102:313-322.
- Kanervo M, et al. 2024. Intrauterine exposure to maternal opioid maintenance treatment and associated risk factors may impair child growth. *Acta Paediatr*, 113(7):1579-1591.
- Kanervo M, et al. 2024. Extended-release versus oral buprenorphine as opioid maintenance treatment during pregnancy-maternal and neonatal outcomes. *Eur J Obstet Gynecol Reprod Biol*, 297:106-110.
- Kinsella M, et al. 2022. Buprenorphine compared with methadone in pregnancy: a systematic review and meta-analysis. *Subst Use Misuse*, 57(9):1400-1416.
- Knittel AK, et al. 2023. Neonatal outcomes after medications for opioid use disorder during pregnancy in a state women's prison facility, 2016-2019. *J Addict Med*, 17(5):587-591.
- Kocherlakota P. 2014. Neonatal bstinence syndrome. *Pediatrics*, 134(2):e547-e561.
- Krans EE, et al. 2021. Outcomes associated with the use of medications for opioid use disorder during pregnancy. *Addiction*, 116(12):3504-3514.
- Kumar N, et al. 2021. Impact of opioid maintenance treatment during pregnancy on neonatal birth weight and head circumference. *J Neonatal Perinatal Med*, 14(4):475-484.
- Kushnir A, et al. 2023. Neonatal abstinence syndrome in infants with prenatal exposure to methadone versus buprenorphine. *Children (Basel)*, 10(6):1030.
- Mallinson DC, et al. 2024. Maternal opioid use disorder and infant mortality in Wisconsin, United States, 2010-2018. *Prev Med*, 181:107914.
- Marc B, et al. 2025. Is buprenorphine maternal dose associated with neonatal opioid withdrawal syndrome severity? *Am J Addict*, 34(1):15-20.
- Nelson LF, et al. 2020. Cognitive outcomes of young children after prenatal exposure to medications for opioid use disorder: a systematic review and meta-analysis. *JAMA Netw Open*, 3(3):e201195.
- Reece-Stremtan S, Marinelli KA. 2015. ABM Clinical Protocol #21: Guidelines for breastfeeding and substance use or substance use disorder, Revised 2015. *Breastfeed Med*, 10(3):135-141.
- Ordean A, Tubman-Broeren M. 2023. Safety and efficacy of buprenorphine-naloxone in pregnancy: a systematic review of the literature. *Pathophysiology*, 30(1):27-36.
- Patel N, et al. 2024. Weaning buprenorphine in pregnant patients. *J Matern Fetal Neonatal Med*, 37(1):2337711.
- Patel NB, Parilla BV. 2024. Buprenorphine induction using microdosing for the management of opioid use disorder in pregnancy. *AJP Rep*, 14(1):e88-e90.

- Schuckit MA. 2016. Treatment of opioid-use disorders. N Engl J Med, 375:357-68.
- Shah D, et al. 2025. Outpatient tapering of buprenorphine in opioid use disorder pregnancies may improve neonatal outcomes. J Perinatol, doi: 10.1038/s41372-025-02211-6.
- Smith D, et al. 2024. Evaluating the effect of maternal opioid maintenance dose on the NOWS-COS outcome criteria: a pilot study. Clin Pediatr (Phila), 63(12):1670-1677.
- Soyka M, 2013. Buprenorphine use in pregnant opioid users: a critical review. CNS Drugs, 27(8):653-662.
- Staszewski CL, et al. 2020. Comparison of buprenorphine and methadone in the management of maternal opioid use disorder in full term pregnancies. J Perinat Med Sep, 25;48(7):677-680.
- Straub L, et al. 2024. Comparative safety of in utero exposure to buprenorphine combined with naloxone vs buprenorphine alone. JAMA, 332(10):805-816.
- Suarez EA, et al. 2022. Buprenorphine versus methadone for opioid use disorder in pregnancy. N Engl J Med, 387(22):2033-2044.
- Suarez EA, et al. 2024. First trimester use of buprenorphine or methadone and the risk of congenital malformations. JAMA Intern Med, 184(3):242-251.
- Sundelin-Wahlsten V, Sarman I. 2013. Neurobehavioural development of preschool-age children born to addicted mothers given opiate maintenance treatment with buprenorphine during pregnancy. Acta Paediatr, 102(5): 544-549.
- Wiegand SL, et al. 2015. Buprenorphine and naloxone compared with methadone treatment in pregnancy. Obstet Gynecol, 125(2):363-368.
- Woudes TA, Lester BM. 2023. Opioid, methamphetamine, and polysubstance use: perinatal outcomes for the mother and infant. Front Pediatr, 11:1305508.

Dúvidas? Ligue para 866.626.6847 | Envie mensagem de texto para 855.999.3525 | Envie e-mail ou acesso o Chat no endereço [MotherToBaby.org](https://www.MotherToBaby.org).

Disclaimer: MotherToBaby Fact Sheets are meant for general information purposes and should not replace the advice of your health care provider. MotherToBaby is a service of the non-profit Organization of Teratology Information Specialists (OTIS). Copyright by OTIS, 1 de fevereiro de 2025.