FEDERAL HEALTH ARCHITECTURE PROGRAM

Federal Medication Terminologies (FMT) Enabling Health IT Interoperability

Topics

- Goal
- Background
- Components
- Accessibility
- Collaboration
- Summary

Goal

- *To make available comprehensive, freely and easily accessible standard medication terminologies to enable Health IT interoperability*
- *To facilitate federal interagency collaboration in order to provide:*
  - *Access to common language for communicating medication information*
  - *Processes for maintaining terminologies*
  - *Infrastructure for sharing that information*
  - *Identification of initial terminology components endorsed through Consolidated Health Informatics (CHI) and further development efforts to increase robustness of FMT*

U.S. Department of Health and Human Services

United States National Library of Medicine National Institutes of Health

U.S. Food and Drug Administration

National Cancer Institute

AHRQ Advancing Excellence in Health Care

CMS Centers for Medicare & Medicaid Services

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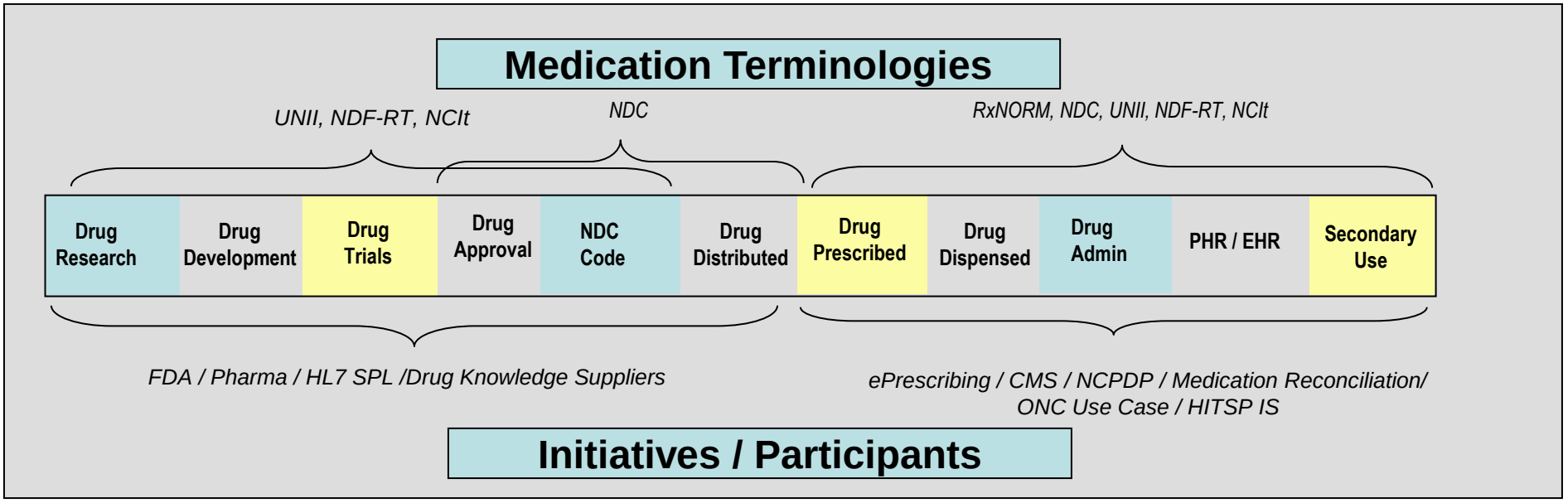
Background

- Consolidated Health Informatics (CHI) 2003-2006
  - National Committee on Vital and Health Statistics (NCVHS) / CHI endorsed selection of medication standards http://www.hhs.gov/healthit/chiinitiative.html
  - Drug code, semantic clinical drug, classifications, ingredients, units
- Need for standardization of medication terminology



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Component Vocabulary Systems

- Food and Drug Administration
  - Substance Registration System (SRS)
  - Drug Registration and Listing (eLIST)
- National Library of Medicine
  - RxNorm
- Department of Veterans Affairs/ Veterans Health Administration
  - National Drug File Reference Terminology (NDF-RT)
- National Cancer Institute
  - NCI Thesaurus (NCIt)
- Agency for Healthcare Quality and Research

FMT Component Terminologies

- FDA SRS and eLIST
  - National Drug Code (NDC)
  - Unique Ingredient Identifier (UNII)
- NLM RxNorm
  - Semantic Clinical Drug (SCD)
  - Brand Name (BN)
- VA NDF-RT
  - Mechanism of action
  - Physiologic effect
  - Structural class
- NCI NCIt (SPL subset)
  - Pharmaceutical dose form
  - Route of administration
  - Unit of presentation
  - Package type

FMT Component Terminologies

- National Drug Code (NDC)
  - Maintained and distributed by FDA
    (in conjunction with the manufacturers)
    - Tylox 100 capsules in a bottle - NDC - 0045-0526-60
    - Tylox 100 capsules in a blister pack - NDC - 0045-0526-79
- Unique Ingredient Identifier (UNII)
  - Maintained by FDA and EPA, distributed by FDA Substance Registration System (SRS)
    - Oxycodone hydrochloride UNII - C1ENJ2TE6C
    - Oxycodone - UNII - CD35PMG570
    - Acetaminophen - UNII - 362O9ITL9D
    - Peanut - UNII - QE1QX6B99R
    - Milk - UNII - 917J3173FT
    - Citronella oil - UNII - H711OZ709T
    - Tartrazine (FD&C Yellow #5) - UNII - I753WB2F1M

FMT Component Terminologies

- RxNorm
  - Maintained and distributed by NLM
    - Semantic Clinical Drug (SCD)
      - Diazepam 10 MG Oral Tablet – RxCUI 197590
    - Brand Name (BN)
      - Valium – RxCUI 202472

FMT Component Terminologies

- NDF-RT
  - Maintain by VA, distributed by NCI
    - Mechanism of Action
      - Adrenergic agonists – N000000012
    - Physiologic effect
      - Bronchodilation – N0000008321
    - Structural class
      - Alkaloids – 0000007503

FMT Component Terminologies

- NCIt code sets
  - Maintained and distributed by NCI
    - NCIt Pharmaceutical Dosage Form
      - Tablet, orally disintegrating – C42999
    - NCIt Route of Administration
      - Oral – C38286
    - NCIt Potency (Units of Presentation)
      - Spray - C48537
    - NCIt Package type
      - Bottle – C43169

Federal Medication Terminologies (FMT) Components and Structured Product Labeling (SPL)

- SPL is an ANSI accredited HL7 standard for the exchange of product information
  - FDA uses SPL for exchanging information on approved prescription drug products
  - Future use for additional FDA regulated products (e.g., OTC, animal products)
- Federal Medication Terminologies Standards in SPL
  - FDA – NDC, Unique Ingredient Identifier (UNII)
  - VA NDF-RT- mechanism of action, physiologic effect and structural class
  - NCIt - pharmaceutical dose form, route of administration, unit of presentation and package type
- Federal Medication Terminologies Standards supported by SPL
  - NLM – RxNorm SCD, RxNorm BN

SPL and Other Federal Terminologies

- VA
  - VA/KP Problem List - MIGRAINE (disorder) (37796009)
- NCIt
  - For solid oral dosage form appearance
    - SPL Color - BLUE C48333
    - SPL Shape - ROUND C48348
  - For drug interactions
    - Contributing Factor -General - FOOD OR FOOD PRODUCT C1949
    - Type of Drug Interaction Consequence - PHARMACOKINETIC EFFECT C54386
    - Pharmacokinetic Effect Consequence - INCREASED DRUG LEVEL C54355
    - Limitation of Use - CONTRAINDICATION C50646
    - Sex - FEMALE C16576
    - Race - ASIAN C41259
  - Other
    - SPL DEA Schedule - CII C48675

FMT Support to Health IT Systems

Health IT systems

NDF-RT

Links RxNorm SCD, BN, NDC, UNII, route, dose form, unit, MoA, PE, Structural class to marketed drug products

RxNorm

Links RxNorm SCD, BN, NDC, UNII to marketed drug products

SPL

Links NDC, UNII, route, dose form, unit, MoA, PE, Structural class to marketed drug products

NCIt, VA

Provides terminologies for dose form, route, unit and package type, MoA, PE, Structural class

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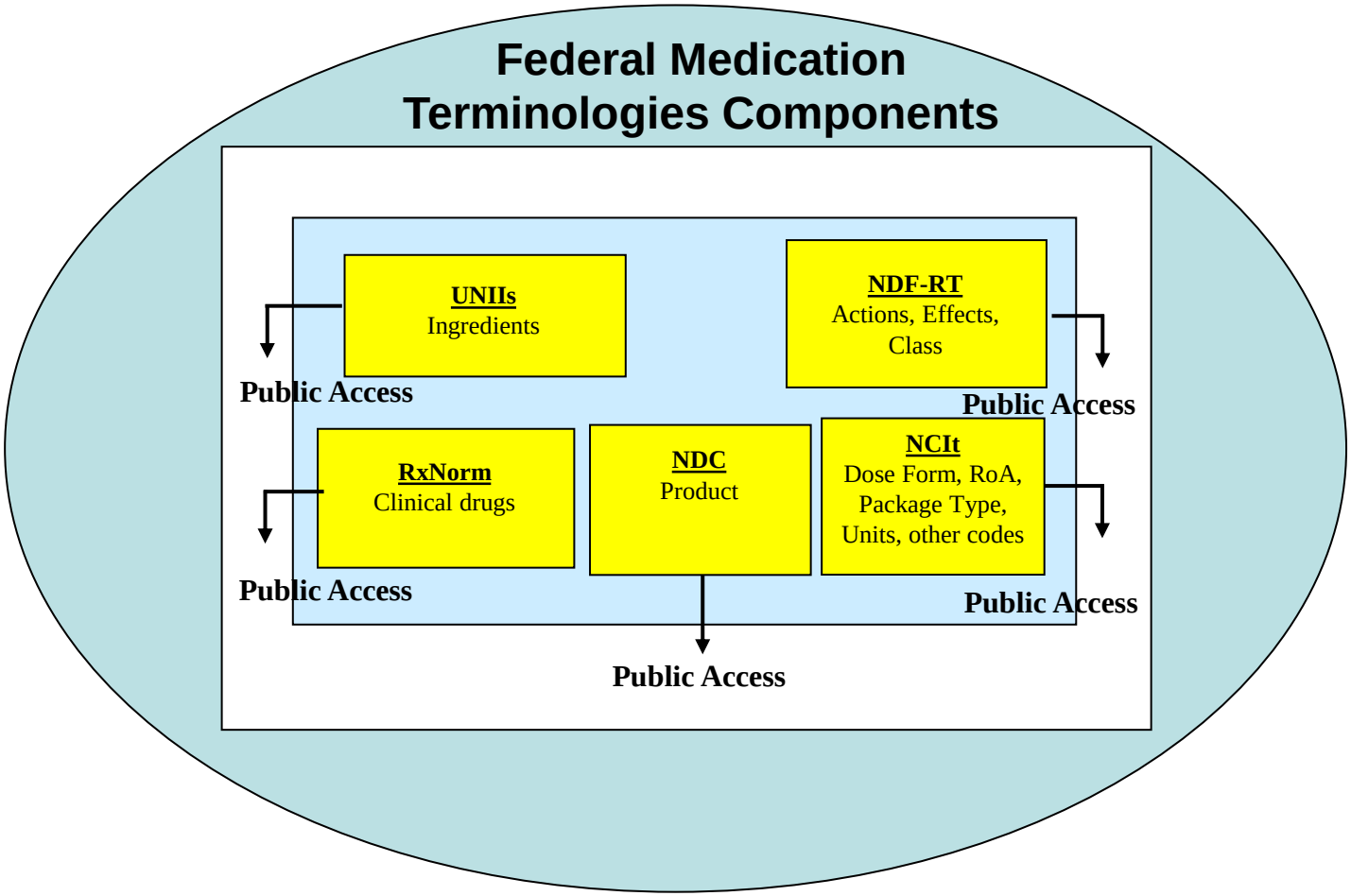
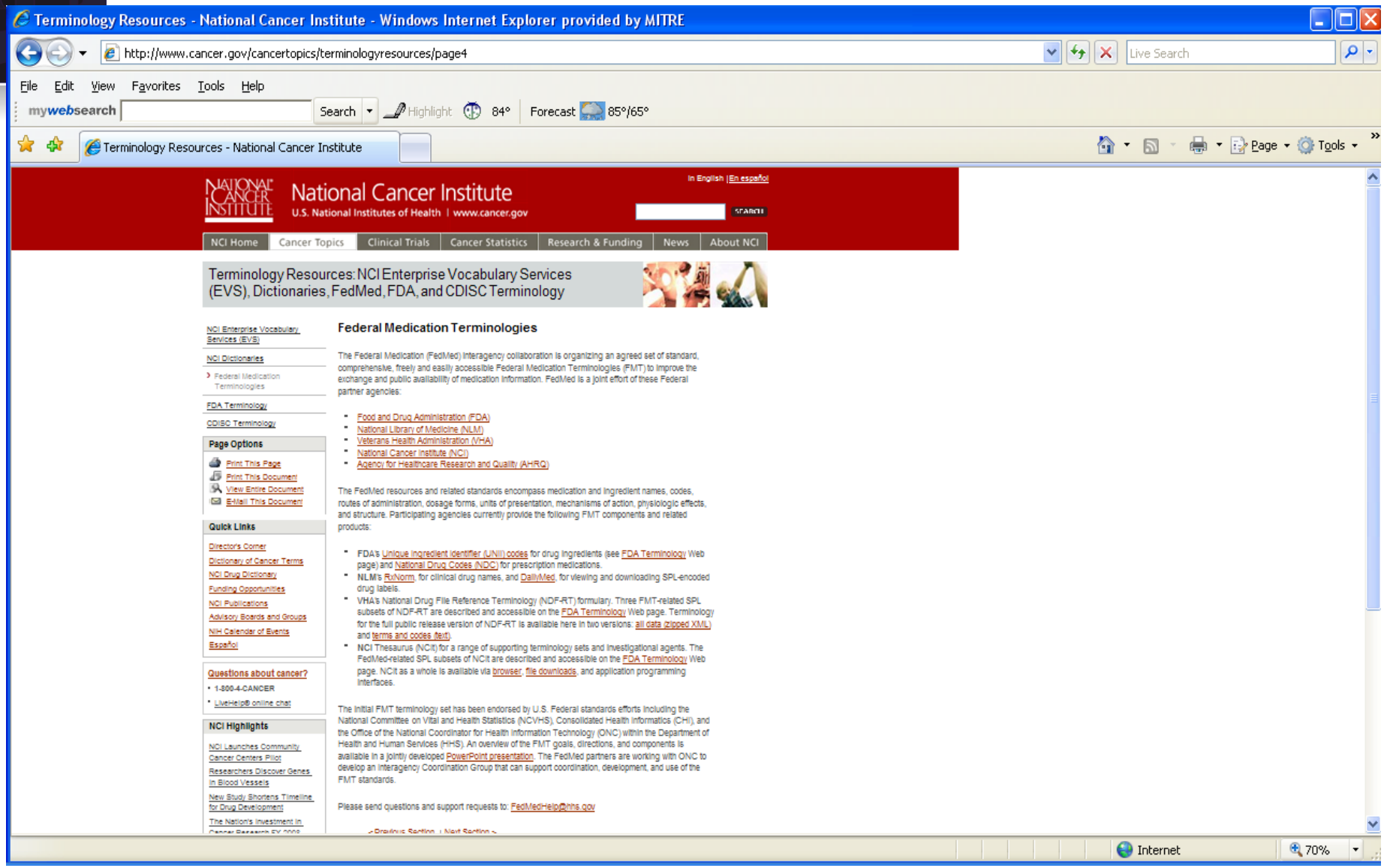
Accessibility Options

All Components are accessible from: FMT Web Portal
http://www.cancer.gov/cancertopics/terminologyresources/FMT



Federal Medication Terminologies Website



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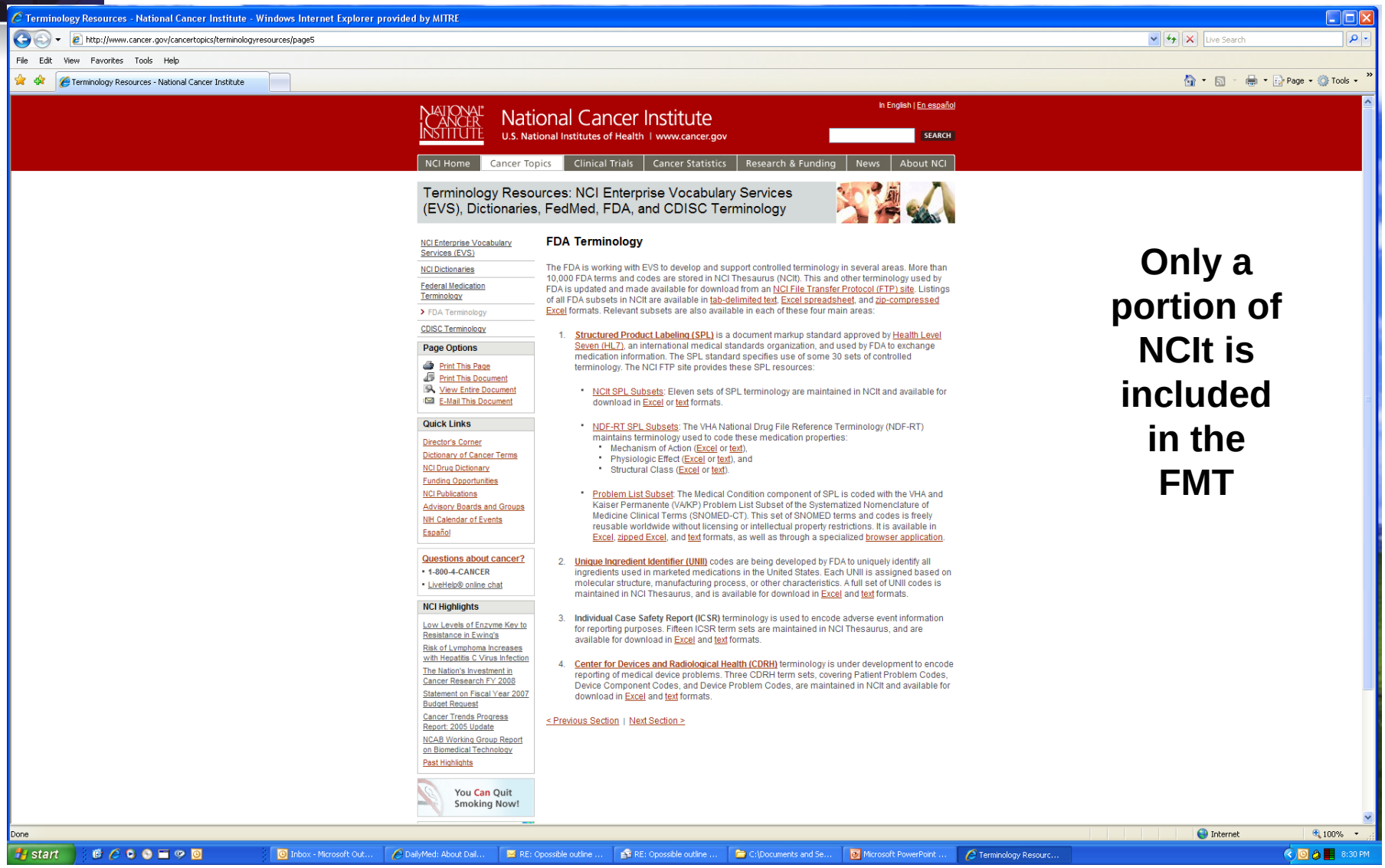
FDA Terminologies

* On NCI Website (include NCIt code sets)



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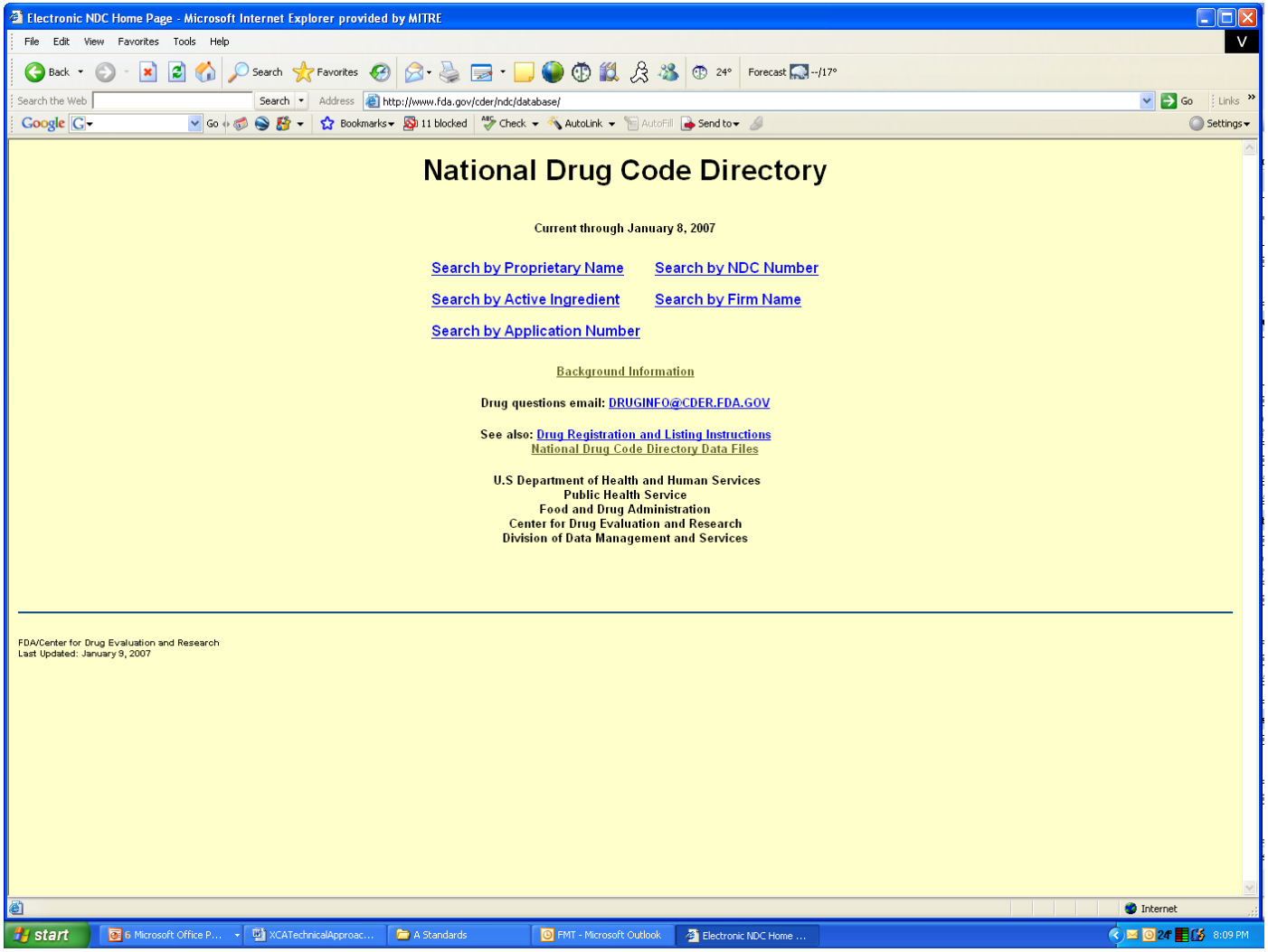
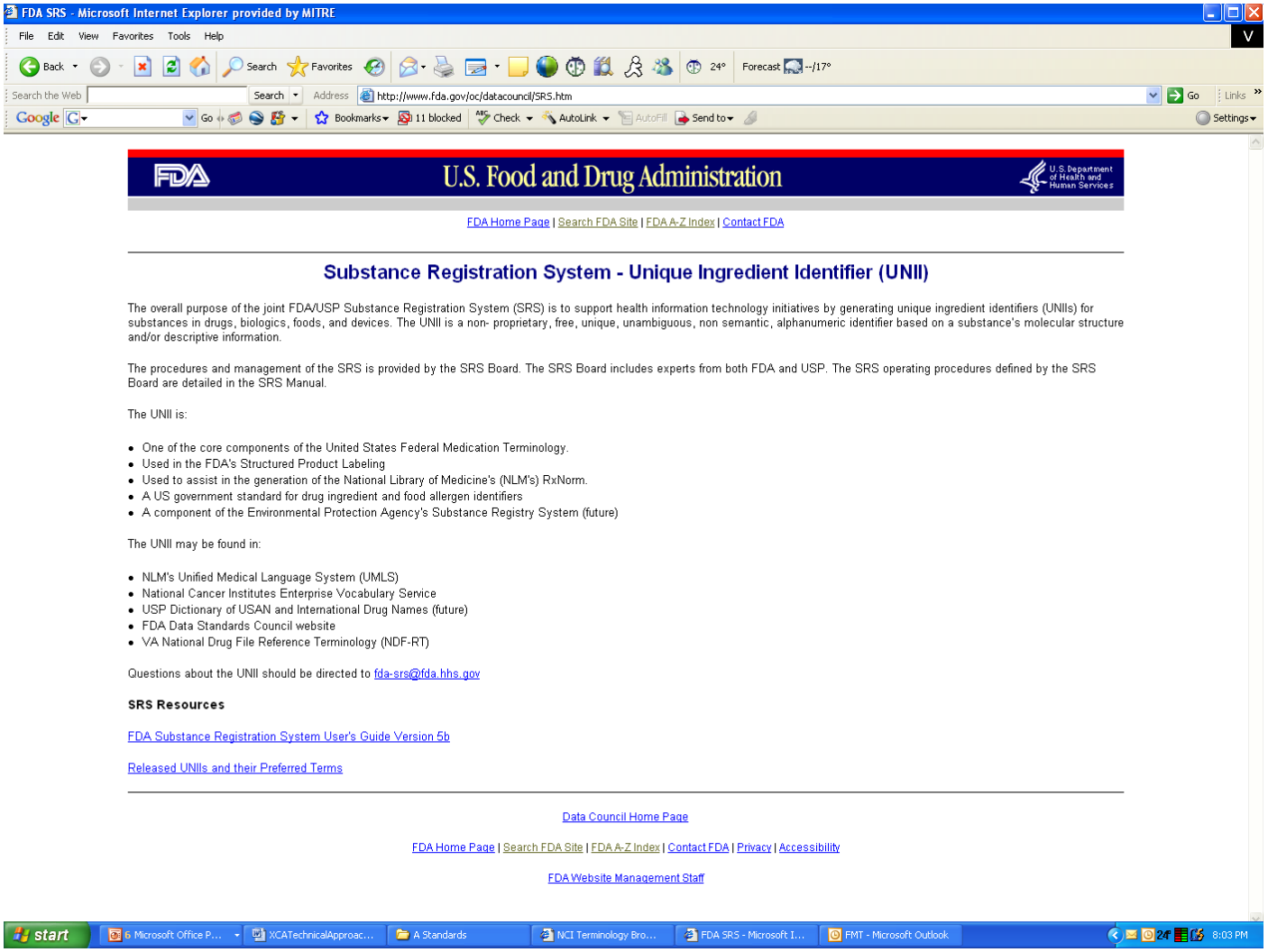
NDC



http://www.cancer.gov/cancertopics/terminologyresources/FMT

http://www.fda.gov/cder/ndc/database/

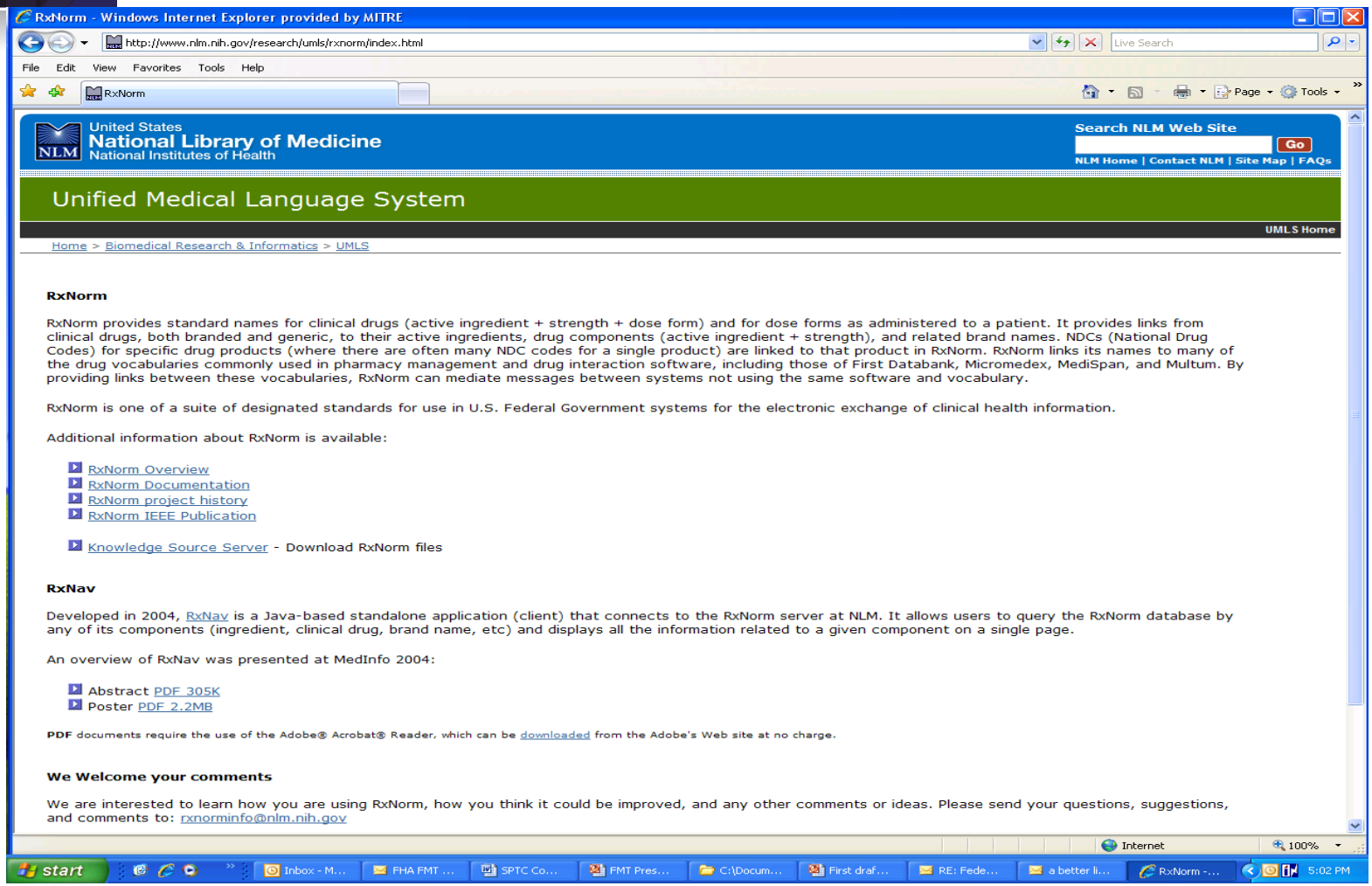
UNII



http://www.cancer.gov/cancertopics/terminologyresources/FMT

http://www.fda.gov/oc/datacouncil/SRS.htm

RxNORM

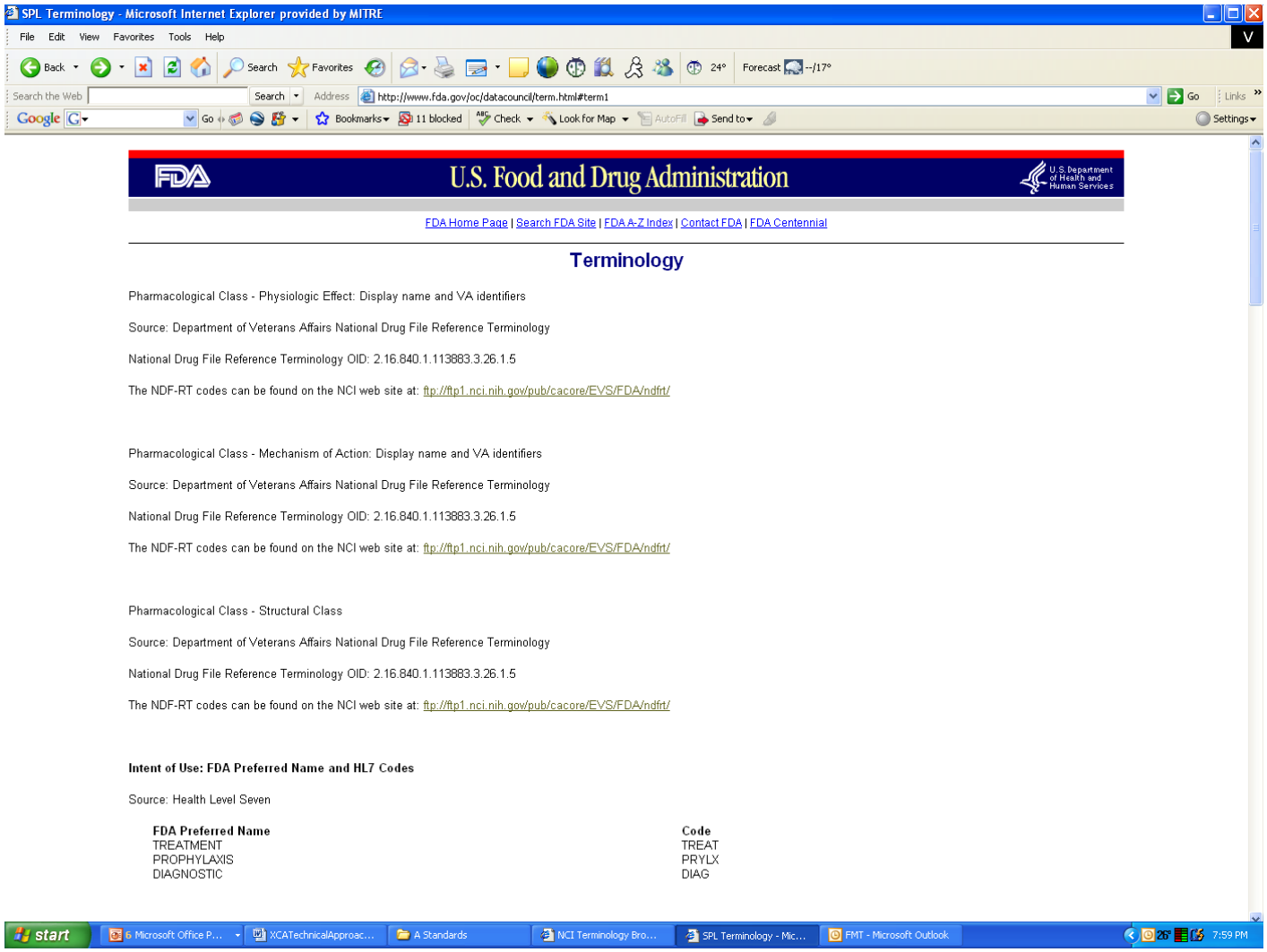


Only a portion of RxNorm is included in the FMT

http://www.cancer.gov/cancertopics/terminologyresources/FMT

http://www.nlm.nih.gov/research/umls/rxnorm/index.html

NDF-RT



Only a portion of NDF-RT is included in the FMT

http://www.cancer.gov/cancertopics/terminologyresources/FMT

ftp://ftp1.nci.nih.gov/pub/cacore/EVS/FDA/ndfrt/

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Collaboration/Coordination

- Fed Med Collaboration efforts:
  - NCI EVS
  - SPL
    - FMT, SNOMED, LOINC
  - HITSP
    - Consumer Empowerment Medication History Use Case
    - Care Delivery Medication Mangement Use Case
  - NIST HCSL, USHIK
  - CHDR
  - SDO efforts: NCPDP, HL7, ICH, ISO
    - Regulatory submissions, Discovery research, Clinical data, Billing, Statistics, Administration
    - Industry agreements, nationally accredited, global standardization
  - ePrescribing
    - SNOMED Mappings
- Fed Med Coordination efforts
  - Authoritative Source
  - Terminology Development
  - Maintenance, Distribution and Accessibility Planning

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Make available
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standard medication terminologies
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