is limited research on using EHR to identify persons with Alzheimer’s disease (AD) and related dementias (RD). In a
data-driven approach, we used all ICD-9 diagnosis and CPT
procedure codes from statewide inpatient, ambulatory sur-
gery, and Medicare records, in addition to age at baseline
and gender, to detect AD/RD from the Cache County Study
on Memory in Aging (1995–2009). After removing partici-
pants diagnosed with dementia at baseline (n=335), 3882
(82%) Cache County Study participants could be linked
to inpatient, ambulatory surgery, and/or Medicare EHR
records; 484 (12.5%) of these 3882 had incident all-cause
dementia, with 308 (7.9%) having AD/AD comorbid with
RD; and 176 (4.5%) having RD without AD. We removed
participant’s ICD-9 codes occurring after first AD/RD dia-
goses. EHR features (~2000) along with gold-standard diag-
noses as class labels were then used to train and detect AD
and/or RD using a Gradient Boosting Trees machine learning
algorithm. Models evaluated with nested cross-validation
yielded AUCs of 0.70 for all-cause dementia, 0.69 for AD/
AD comorbid with RD, and 0.67 for RD without AD. Key
factors detecting AD/RD included age at enrollment, cardio-
vascular, metabolic, and kidney disease, and sleep disturb-
ances, with feature importance varying by record type and
time frame prior to dementia onset. Our findings suggest that
a patient’s health status up to 12 years prior may be useful
in identifying individuals at-risk for dementia development.

EFFECTS OF CAREGIVER INTERVENTIONS FOR
INFORMAL CAREGIVERS OF OLDER ADULTS WITH
COGNITIVE DECLINE
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Objectives: To identify baseline factors and process fac-
tors, which indicate changes that are associated with care-
giving confidence improvement attributed to caregiver
support.

Methods: An intervention study using 35 informal care-
givers (ICG) of older adults (≥65 years old) with cognitive
decline. Recipients of ICGs belonged to the Programs of All
Inclusive Care for the Elderly (PACE). Interventions were
occupational therapy (OT) support or education about illness
and effective caregiving methods, which took place in ICGs’
homes. OT interventions included training to reduce physi-
cal strain, and improve time and task organizations, and
providing assistive devices). Caregiver confidence was mea-
ured using a Visual Analog Scale. Data were divided into
two groups: improved confidence and decreased/no-change
confidence. Eleven baseline data of care recipients (CRs) and
ICGs as well as five process data were analyzed using logistic
regression.

Results: Baseline factors that differentiated the two groups
were ICG’s age, caregiving confidence level, and CR’s cogni-
tive status, of which classification accuracy was 94.3%. Only
Zarit Buren Interview (ZBI) score was associated with care-
giving confidence change, of which classification accuracy
was 74.3%. Younger ICGs, lower cognition, and lower care-
giving confidence among baseline factors, and improved ZBI
among the process factors were associated with improved
confidence.

Discussion: Although our interventions prevented 65.7% of
caregivers form declining their caregiving confidence,